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ABSTRACT

This report focuses on the goals of American education and suggested programs for NIE. The goals discussed are those that the American educational systems seems to be aimed at. They are classified into two main categories: output goals, essentially the ends which the system is geared to achieve, and process goals, attributes of the processes through which the putput goals are reached. A series of programs are suggested in Chapter II to serve these goals. In order to approach output goals, Program 1 recommends an intermediate phase: Operation Codify, Blueprint. This would involve collecting relevant data on the costs, effectiveness, and prerequisites of different aspects of the educational system. Program 2 recommends emphasis on expressive tests and indicators. Program 3, Project Authority: New Styles, would seek new, more flexible structures of authority at all levels. Program 4 emphasizes the need for students to be involved in real situations and to become acquainted with different sub-cultures. Program 5 suggests Educational Concertation Centers, to help collect, coordinate, and disseminate information and resources. Program 6 proposes Technological Shortcuts as a means of economizing. Program 7 suggests Operation Dialogue as a bridge between NIE, local and state school systems, and other educational institutions. The systems approach used in this report identifies the potential barriers to the realization of goals. An analysis of the existing educational system is recommended, in order to discover why the system so often fails to meet its goals and why educational research helps so little. Some suggestions for improving the present system conclude the report. (For related document, see AA 001 048). (Author/CK)

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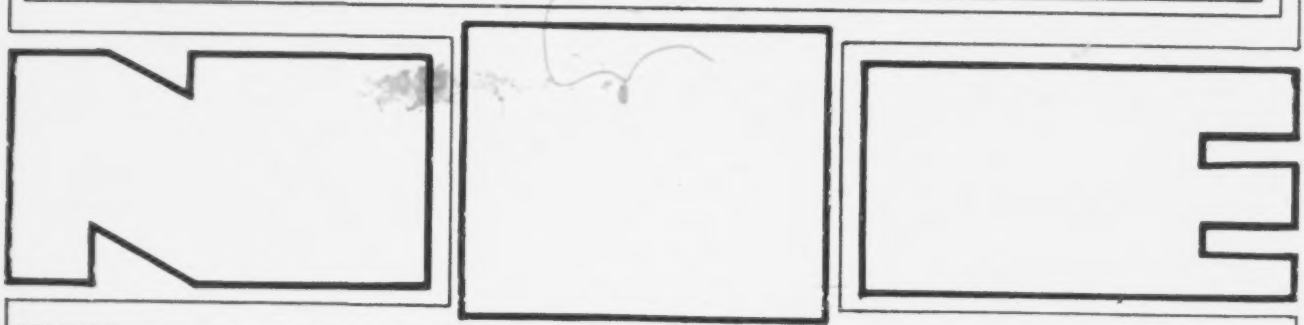

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Planning Report No. P105

AN NIE STRATEGY PAPER

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July 1972

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ABSTRACT

This report focuses on the goals of American education and suggested programs for NIE. The goals discussed are those that the American educational system seems to be aimed at. They are classified into two main categories: output goals, essentially the ends which the system is geared to achieve, and process goals, attributes of the processes through which the output goals are reached.

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The systems approach used in this report identifies the potential barriers to the realization of goals. A thorough analysis of the existing educational system is recommended, in order to discover why the system so often fails to meet its goals and why educational research helps so little. Some suggestions for improving the present system, which would result from adoption of the programs outlined, conclude the report.

PREFACE

To develop a strategy for a program aimed at identifying the goals of the American educational system and the means that could accelerate their realization is to deal with a system that spends more than $65 billion a year and involves 60 million pupils. In addition, of course, all other members of society are deeply affected by the educational system as teachers, parents, taxpayers, citizens, etc.

To suggest that one can make a significant contribution to the analysis of such a program on the basis of four weeks' time–one person at work with minimal research assistance–borders on the absurd. Hence, the following report, by necessity, relies heavily on the previous work of the author and of others. This is at best a preliminary and incomplete statement. It is basically an indication of the directions in which such an analysis might proceed, given the required time and resources. Thus it would be most useful to view this report as a first approximation, which may, if its general orientation is shared, be further elaborated on. Above all, additional program alternatives should be reviewed; the numerous statements made throughout the report about the relative cost, state, and consequences of various approaches all require additional examination and verification.

Aside from additional months of work and greater resources, further development of a strategy for NIE requires a dialogue among interested parties, with one or more outsiders (who have no stakes) acting as "mediators." This report, together with those prepared by others on this topic, may serve as a stimulus for such a dialogue.

The present report is divided into the following parts:

I. A statement of the present goals of the American educational system, their relations to each other, and to affected groups.

II. Suggestions for new programs with attention given to the aspects of these which may be launched as part of the research efforts of NIE in FY 1973 and 1974.

III. A discussion and evaluation of "the state of the art," which will note the correlation between the suggested programs and the possibilities for overcoming the barriers to an accelerated realization of the educational goals in the existing system.

I. CONTEMPORARY GOALS OF THE AMERICAN EDUCATIONAL SYSTEM

A. Nature of the Goals to be Discussed

Unlike goals for systems which are wholly or largely owned, financed, and managed by the federal government (e.g., defense, space), those of domestic systems cannot be set by planners, administrators, or even by legislators. Goals of systems such as American education arise out of a dialogue—a give-and-take between thousands of community leaders, members of social movements (civil rights, new left), lobbyists, and the active wishes of millions of teachers, parents, pupils, and school administrators. Many an administrator assumes that he knows, or can readily divine, what the citizens', leaders', Congress', and others' goals are. However, a number of studies have shown that this is certainly not the case. For example, Donald C. Orlich and S. Samuel Shermis (1965) discovered that of the hundreds of schools and school boards they studied, most do not know what their educational philosophies or even what their educational objectives are. Actually, these goals and the priorities accorded to each of them change under the impact of the dialogue among all involved; thus, frequently the citizens, leaders, and all others involved, themselves do not know what their final (as distinct from preliminary and tentative) preferences are. Below, specific procedures are suggested to help intensify and advance the national dialogue about educational goals, with The National Institute of Education (NIE) both enriching and benefiting from it. Here we can only list goals on the basis of our view of what such a dialogue might yield. This view would surely be changed once the actual dialogue is intensified and once it has been given focus as suggested below.

It cannot be overstated that the list of goals that follows are not those of the author of this report or of HEW or NIE staff with whom he consulted. The goals are those that the American educational system seems to be aimed at. Readers of this report may find some "good" or "not so good" and may wish to support or oppose certain aspects of them. Our task here was not to find "nice" goals but to try to identify those of the American educational system.

Such goals are by necessity fairly general, although specific targets can be derived from their statement. Such goals are of course not shared by everyone; some are closer to the heart of Middle America, some to that of the minorities. But the whole list does cover goals which seem to be agreed upon by most Americans. Data to this effect is available from numerous national public opinion polls and specific studies.

The goals are classified into two main categories: output goals and process goals. (Inputs, such as funding, are viewed here as resources or means rather than as goals in themselves.) *Output goals* are essentially the ends which the system is gearing itself to achieve. *Process goals* concern attributes of the processes through which the output goals are reached; however, the process goals have acquired a status of desirability in themselves. Thus, unalienating education is a process goal; whatever the output desired—say, a command of arithmetic—it should be pursued in a way which is involving rather than alienating. Process goals, as even a cursory review of those presented below will show, are not less dear to our fellow citizens than are the output goals. Hence, the process goals are treated as equal in status to the output ones.

The output goals are here classified in two categories derived from sociological theory. They are divided into an exhaustive pair, instrumental versus expressive goals (similar to the cognitive versus affective pair), defined from the viewpoint of the individual child or parent. *Instrumental goals* focus on the desire to increase the capacity to achieve, to do, to perform. They deal with "means" or instruments. *Expressive goals* are aimed at enriching the being of the person (or group) involved. They view the person as an end in itself rather than as a tool.

All the goals reviewed below are idealistic in that they mark the direction in which the nation seems to want to move. None of these can be realized in the next two years. However, significant contributions could be made in this period; hence there is great value in stating these longer range targets.

All the goals discussed seek correction in *balances* rather than in absolute states. For example, "in the view of many, a priority task for the nation is to re-establish *the mutually reinforcing relationship* between the educational system and the long-range qualitative and quantitative requirements for development of society as a whole. . ." (National Goals Research Staff, 1970, p.

78). Recently there has been a great increase in the concern for quality of education. There is a growing sentiment that "quantitative" matters are "under control" because: (1) the group of children entering the system will be decreasing (Rosenthal, 1972); (2) there is a surplus of teachers and Ph.D.'s; and (3) the problems of dropouts have been minimized.

Thus, the increased concern with the quality of teachers and relevance of the curricula, etc., have moved to the forefront. Quantitative concerns should not be disregarded, but should be viewed as only somewhat lower in priority, so that higher attention is given to the qualitative aspects. Thus, "elementary and secondary schools are entering a new era, one in which they can relax their traditional preoccupation with quantity of education and concern themselves more directly with improved quality" (National Goals Research Staff, 1970, p. 78). This is what we mean by change in balance.

Finally, we deal here with the goals of "regular" primary and secondary education, not with those of special education (e.g., of the handicapped), adult, or professional education. Most of the points that are made here also apply to post-secondary education. Given that our views on its missions are already on record (Etzioni and Milner, 1970), we will not focus on those here. We do, however, deal with the goals of the educational system and not just with those of schooling.

B. The Main Goals

I. Output Goals

a. Instrumental Goals

1) To increase the child's capacity to find, evaluate, digest and use information over his capacity to memorize specific bodies of information.

More emphasis is needed on the process of learning, of knowing how to get information and what to do with it, and less concern with specific bits of information or the memorization of facts. As Keppel has pointed out, "inquiry demands independence. Schools have to offer the learner freedom to gather and process data. This implies setting aside timetables of content coverage" (Keppel, 1977, p. 116). This is not to say that America should stop teaching basic facts, but that the emphasis on facts has been out of balance with the relatively neglected aspects of teaching processes to children.

If educational institutions concentrate on teaching specific items of information, they face the danger that these items will be outmoded or obsolete by the time their students are ready to apply them. Burton Clark argues that

> One source of strain upon the school's transmission of culture is the high speed of social change. With rapid change, the schools become less sure that what was right for the last generation is right for the next. In stable societies, this difficulty exists in minor degree if at all: preliterate societies may go virtually unchanged for centuries; on the feudal estates of medieval Europe, the adult way of life changed quite slowly. But in modern society, the new generation faces technological and social tasks that never existed before its time, with the future promising additional changes of unknown nature. Rapid change heightens the need to educate for adaptability, often at the expense of imparting the cultural heritage (1962, p. 19).

A constant attempt to update and revise educational content would be both costly and ineffective because it would demand an anticipation of those skills necessary a decade in the future–a task which is at this time almost impossible. Accordingly, a more satisfactory solution is found along the lines suggested by *The Report on National Goals:* "Whereas once the task of the school was to transmit information, the job today is to give the student the cognitive resources to handle the information coming from many sources" (1970, p. 85). Thus, the student must learn where new information can be found as his need for it arises, how to evaluate and digest that information, and then how to put this new knowledge into practice.

However, it should be recognized that just as an overemphasis on collecting bits of information has been insufficient, an overemphasis on the ability to adjust to new information could occur. No matter what changes occur over the next decade, it is obvious that a basic background in reading and mathematics will be necessary. The child's capacity to deal with a changing reality must be emphasized more, but in addition to, not instead of, gaining a solid command of needed basic information and skills.

2) To prepare the child for a wide range of career pursuits and life styles rather than with a full preparation for any one career or life style.

Educational institutions should emphasize education for a broad range of activities rather than narrow training for a particular job and life style. Within a lifetime many individuals may have a number of changing interests, both in vocation and life style. If educational institutions are to meet the needs of the society they are serving, then they must recognize this fundamental condition. Not only will the interests of individuals change, but so will the opportunities offered by the society that they grow up in. John Gardner has written: "Nothing contributes more dangerously to the unemployment of educated talent than rigid specialization and rigid attitudes supporting this specialization" (1961, pp. 42-3). At present, educated talent is being overproduced in specific lines. Indeed, on many occasions in the future there may well be an imbalance between the number of people trained for a given line of work and the number of jobs available. Attempts could be made to reduce this through better forecasts of manpower needs, but experience with such forecasts has been discouraging. The alternative—and the wiser course—is to educate men and women who are capable of applying fundamental training to a wide variety of jobs.

Preparation for alternate careers is a basic goal for participants in the American educational system. Particularly in regard to college, but also in regard to high school, a number of surveys have shown that many parents and students consider the provision of basic skills, professional training, and vocational training to be the most important job of the school (see *National Opinion Research Center*, 1944; Remmers and Radler, 1957; Slocum, 1956).

In the past, educational reformers have recognized the connection between school and career, but have tended to define this connection too narrowly. For instance, Conant, one of the most eloquent proponents of this position, has written, "in a heavily urbanized and industrialized free society, the educational experiences of youth should fit their subsequent employment" (Conant, 1964, p. 38). This position includes two emphases in need of correction. First, it values diversity in the social system as a whole while it neglects the diversity of a single individual's interests. That is, the emphasis on providing different paths through school has led to a tracking system which fails to recognize that individual students may change in their interests and grow in their abilities. Second, the Conant position tends to equate life pursuits with occupation. But the contemporary upheaval in life styles has shown that there is a wide range of options in the way a person can live as well as in the way that person can work. If this choice is to be made soon after high school or college, then the educational system must help the student make it.

b. Expressive Goals: To develop the child's capacity to lead a full life—open to new ideas, aesthetic considerations, others, and himself.

Without the restraints imposed by a scarcity economy and the push to modernization, the American educational system has been subject to growing demands for an increased emphasis on expressive values. The educational institution should help the child learn: to understand others and relate to them in an open, honest manner without becoming conformists; to be aware of his inner life and emotions without being a prisoner of impulse; to build a positive and individual character while remaining open to new ideas. In *Crisis in the Classroom*, Charles Silberman has expressed these goals in writing that,

> education should prepare people not just to earn a living but to live a life—a creative, humane, and sensitive life. This means that the schools must provide a liberal humanizing education. And the purpose of liberal education must be, and indeed always has been, to educate educators—to turn out men and women who are capable of educating their families, their friends, their communities, and most importantly, themselves. . . . Of what does this capacity to educate oneself consist? it means that a person has both the desire and the capacity to learn for himself, so that he is dependent on neither the opinions nor the facts of others, and that he uses the capacity to think about his own education, which means to think about his own nature and his place in the universe—about the meaning of life and of knowledge and of the relations between them (1970, p. 114).

While these values are growing in importance, they have a long tradition in American education. In his classic book, *Democracy and Education*, John Dewey stressed both personal and social development and their mutually supportive character.

> In the broadest sense, social efficiency is nothing less than the socialization of mind which is actively concerned in making experiences more communicable; in breaking down the barriers of social stratification which make individuals impervious to the interests of others. . . . For sympathy as a desirable quality is something more than feeling; it is a cultivated imagination for what

men have in common and a rebellion at whatever unnecessarily divides them (1916, p. 141).

In the future, the expressive goals can be expected to have an increasingly important value. More and more, people are seeing that a healthy personality is as important as quantified scores on achievement tests, that a just society is as worthwhile as more consumer goods. For example, Donald Michael argues,

> in tomorrow's world, with versatile technologies and with many more people unneeded in those blue collar, white collar, and service areas where machines can do the job as well, . . .an uninvolved 'professional' attitude will be far less necessary. Indeed, often it will be destructive of both those who can feelingly and trustingly share of themselves and those who can respond to this sharing. The other reason for deliberately undertaking this kind of education is that those who will have the tasks of planning and leading must have a far deeper feel for and understanding of themselves as selves, and as a part of other persons, other selves, than they usually do today. Without such understanding, and the strength that comes with it, they will too easily succomb to pressures to engineer people rather than to encourage their self-discovery–and they will themselves be engineered in the process (1968, p. 110).

2. Process Goals

a. Quality of Education: Advancing toward any one goal should be made without sacrificing quality of service to the others; on the contrary, the quality of all services to all goals should be increased.

Quality education or "good education" is one of the new cue words in America, especially for Middle America and the upper middle classes. It is a way of expressing the need to balance the drive for greater equality with the maintenance of high standards. In order to service the many new pupils who are enrolling in ever greater numbers, there should *not* be a cut back in the services already provided.

The concern for "quality education" can not be dismissed as nothing more than a political football or the fleeting creation of the mass media. As a demand on the school system, its roots are found in the American social structure with its emphasis on equality. John Gardner has written that,

> because of the leveling influences which are inevitable in a popular government, a democracy must, more than any other form of government, maintain what Ralph Barton Perry has called 'an express insistence upon quality and distinction.' When it does not do so, the consequences are all too familiar: the deterioration of standards, the debasement of taste, shoddy education, vulgar art, cheap politics and the tyranny of the lowest common denominator (1961, p. 73).

As much as possible, the achievement of one goal should be undertaken without any sacrifice in quality of service to another goal.

The appeal of quality education extends in various forms to many groups. For instance, Senator Hubert H. Humphrey recently argued that quality education requires busing because segregated school systems cannot provide as good an education (Humphrey, 1972). The same concern is often articulated by citizens. For example, a Catholic mother switched her child from a parochial school to a public school with the explanation, "Tony and I were concerned about quality. We thought maybe the Catholic schools were too narrow" *(New York Times*, 1972). Whatever the particular meaning attached to quality, it is clear that parents are no longer satisfied just to see their children get an education, but are demanding a good education as well.

b. Equality of Opportunity: All members of the society (or relevant age group) should have equal opportunity to be served.

The commitment to equal opportunity is a basic American value. Embodied in our constitution and laws, this commitment is expecially strong in its application to education for *all* the Nation's children–rich or poor, Southern or Northern, fast learner or slow learner, white or black.

The problem of inequality of opportunity is often thought to concern only minority groups. But there are also enormous disparities in educational opportunity for children living in different regions and coming from different income groups, regardless of ethnic group. For instance, funds allocated for education may vary by as much as a factor of ten within the different districts of a single state. And among states, expenditure per pupil varies according to our report from $293 in Mississippi to $858 in New York (Hutchins and Bar, 1968, p. 69). A study of nearly 500 public schools found that twice as many teachers and administrators wanted transfers in the lowest class schools as in the highest class schools

(Herriott and St. John, 1966, p. 207). Other differences among the educational opportunities of Americans are equally well known. Equality of opportunity, a basic American value, has not yet been realized.

For minority groups the most important educational goal is gaining access to the school system on a basis equal to that of other groups. Among Blacks, Puerto Ricans, Mexican-Americans, and Indians there is a desire for more and better schooling and a sense of frustration at the services that have so far been provided. Kenneth Clark has expressed this mood well in writing that,

> the schools attended by Negro and poor children have less adequate educational facilities than those attended by more privileged children. Teachers tend to resist assignments in Negro and other underprivileged schools and generally function less adequately in these schools. Their morale is generally lower; they are not adequately supervised; they tend to see their students as less capable of learning. The parents of the children in these schools are usually unable to bring about any positive changes in the condition of these schools (1968).

The consequences of these conditions include a cumulative lag in academic achievement, a high rate of dropouts, and a waste of the society's talent. Therefore, minority group members demand equal education.

c. Economy: Costs of the system should grow less rapidly; the expense should level off, or better yet, be reduced.

For the taxpayers, who shoulder the financial burden of the educational system, this goal is particularly salient. There are already striking indications of a taxpayer's revolt. Based on dollar value, 79.6% of public school bonds were approved in 1958-59. One decade later the figure was 43.6% *(New York Times,* 1970). Even in affluent Scarsdale, a school bond was voted down, it seems for the first time, in 1970. The *Report on National Goals* suggests that

> whatever decisions are eventually reached on defining educational standards and equality of opportunity, there will be a great deal of concern about the high costs of schools and their operating efficiency. For those paying heavy taxes, the cost of education has been a growing source of concern. The local tax burden has reached a level at which many voters are unwilling to support more school outlays (National Goals Research Staff, 1970, pp. 93-94).

The demand to hold costs down must be understood in the context of increasing needs for material and personnel. In part this comes from a commitment to universal education. As E. Gil Boyer points out,

> The school manager, in short, is faced with an expensive three-way stretch in his school population. The students are starting earlier, staying longer and coming back more as adults. At the same time the population is expanding. Thus our national commitment to educate everyone is compelling us to provide more years of education for more and more people (1965, p. 200).

d. Disalienation, Involvement and Legitimation: The services to be provided, their quality, distribution, expense and mode of improvement should be such as (1) to provide sufficient motivation to the participants (children, teachers) to carry out their mission effectively, rather than in a disaffected, unmotivated, hostile manner; (2) to allow citizens, both as parents and voters, to view the educational system as legitimate rather than elitist, prejudiced, arbitrary, bureaucratic, or authoritarian.

The desirability of motivating students has been widely recognized–both for its intrinsic value and for its value in improving performance. But genuine pleasure in school work has very often been missing. Patricia Sexton has described the motivation structure of a school in these terms:

> School incentives are unique. Monetary rewards are absent for students, except as much delayed gratification in later life. Status rewards are most common, but they are effective only with those who want and can get status for academic achievement. For others it is usually a negative incentive. Some students simply enjoy academic learning, but many others, endowed with a desire to learn, nevertheless, find little of interest in school subjects (1967, p. 73).

The question of how schools may be changed into, or exchanged for, places that are more motivating is a subject discussed below. Here it is sufficient to note that the demand for relevant, involving educational institutions has sharply increased over the last decade.

The need to motivate teachers may well be less apparent than the need to motivate students, but it is equally important. Even the most lively students can have their enthusiasm crushed by a disinterested teacher. But a high level of teacher involvement is difficult to create and sustain. According to Charles Silberman,

> in teaching, effort has very little relation to extrinsic rewards such as high salary or status, since they are geared largely to length of service and number of courses taken and number of degrees acquired. And while 'ancillary rewards' such as job security and long vacations may attract people into teaching in the first place, they are relatively unimportant once a person has become a teacher, since they are identical for almost everyone in the field. Intrinsic rewards such as satisfaction and pride of accomplishment, on the other hand, *are* related to effort (1970, p. 270).

What emerges from this point is the realization that the disalienation of the teacher and the disalienation of the student are intertwined as each rewards the other.

The voters, taxpayers, and parents who support the school system provide a different kind of involvement problem. Recently, the schools have been a storm center for disaffected parents unsatisfied with both the content taught and the procedures used in the schools. For them to be satisfied with the school system, they must perceive it as legitimate. As Orville Brim has written,

> the most important tradition in the sociological analysis of the aims of education has been the study of the relation between such aims and the general values of society, with special reference to the social control over the aim of education. The primary conclusion supported by this research is that the aims of education are in the last analysis prescribed and legitimized by the community (or society) in which the institution exists. . .This institutional enterprise is chartered by society to train society's members for adequate adult role performance. The aims of education are consonant with the conceptions of the ideal adult which society wishes to produce, and the educational institution possesses legitimate power to pursue its aims only to the extent that they are in fact those which society considers desirable (1958, p. 15).

When the schools are not responsive to the society around them, the consequence is antagonism. If the schools are to avoid such antagonisms, they must find ways for the supporting community to take part in the educational process without the restraints of elitism and prejudice, bureaucracy and arbitrariness.

3. The Goals and Post-Modern America

Several social scientists have argued that the United States is moving into a post-modern era (Bell, 1967, Etzioni, 1968, 1972). The educational goals listed above suggest that the educational system seeks to accommodate this change and to make its contribution to it. Thus, the instrumental goals seek to adjust to the information explosion and the use of electronic media; the expressive and "quality" goals, to increase the quality of life over mere productivity. Disalienation/involvement responds to a major demand of the post-modern era: for a more participatory form of government not just in the general governmental organizations but also in institutions such as churches, factories, and schools. The concern for equality and economy are "unfinished business" from the previous era.

4. Groups to be Affected

Any change in the level of realization of the nation's educational goals will, of course, affect all Americans as citizens and taxpayers, employers and employees. However, certain goals are closer to the wishes of some groups than to others. The programs outlined below aim to provide the following groups with significant service to goals that are particularly dear to them:

Functional groups
1. Pupils and their parents;
2. Educational staffs (teachers, administrators);
3. Citizens as taxpayers.

Stratification groups
1. Minorities and the poor;
2. Middle America (lower middle class and upper working class);
3. Upper middle classes. .

For example, the concern with economy is shared by all groups, but it seems greater for Middle America and taxpayers (many of whom have no school-aged children at all or none in the public schools); equality is of concern to all Americans but particularly important to many members of the minority groups and the poor.

5. On the Relationships Between Goals and Programs

It is neither possible nor desirable to have one program per goal, aimed at achieving that one goal. All goals are affected by all programs and all programs have multi-goal effects. An example from an entirely different sphere will make this point clearer. If we seek to wipe out all the cities of nation X, we would use a mix of submarines, long range land-based missiles, and strategic bombers; we would not rely on just one of these efforts. Using each of these efforts, in turn, will affect the

services to other goals, for example, patrolling the oceans and reconnaissance. The services to these latter goals (e.g., reconnaissance), will help our initial goal, say, by guiding missiles to their targets.

In a similar way, interacting effects among all missions and services in the educational realm are inevitable. However, for any one program suggested, the main goals to be served can be identified, as can the side effects on others. We turn to this in the next chapter.

II. PROGRAMS FOR NIE

A. Criteria for the Formulation of the Suggested Programs

The following decision-making criteria guide this discussion:

1. Each suggested program should make a significant contribution to one or more of the educational goals listed above.

2. Programs should be spread so that if one serves mainly one goal, the other programs should not focus on the same goal; in this way, a wide variety of goals, needs, and legitimate interests will be served by NIE's total effort.

3. From among the programs which are feasible and relevant to the stated goals, those to be chosen will deal with the more "movable" variables, at lower costs per unit.

4. The programs should also help reduce barriers to goal realization specified in Chapter III. Thus, a project may be designed to reduce alienation (one of the process goals) *and* increase our knowledge of the educational system; a program could build up quality *and* deepen the consensus in support of the effort.

5. Programs assume that American education is a comprehensive system; that schools are not to be replaced, but that they need to be augmented by other educational opportunities and that all educational resources ought to be coordinated.

6. Programs suggested below are for the most part *not* basic research programs; they are all generated to advance our educational goals directly through policy research (see Etzioni, 1971), applied research, technological development, demonstration projects, field experiments, etc. A few of the programs require some basic research which should be supported, but only to the extent that it is geared to the needs of the programs.

The reasons for this approach deserve to be briefly indicated. First, the needs of basic research are limitless. To aim at serving a system through the findings of basic research is like seeding the ocean to harvest pearls on some specific coasts. Second, there are other sources for such funds. "Let them go to NSF." Third, most educational basic research (as distinct from the work of psychologists and other scientists which has bearing on educational research) is so poor that is imposes costs on libraries, retrieval systems (e.g., ERIC), granting agencies, etc. for studies whose findings are useless, even for basic research purposes. Exceptions for the qualified minority of basic research strategies have to be made by NIE. Some funds should be set aside for basic educational research, expecially if NSF will not cover this category. Thorough screening procedures should be set up if such a basic research branch is to be established. A training program for educational basic researchers may be considered in collaboration with one or more universities.

7. NIE will do well to focus on educational missions and, as much as possible, leave other relevant missions to other agencies, although NIE might offer ideas and, if practical, guidance. Thus, basic research may essentially be left to NSF, food for needy children may best be provided by the Department of Agriculture or other branches of HEW, and medical services for pupils by various health services and agencies, etc. Even the appropriate R&D may better be delegated elsewhere, at least in the near future. NIE will have its hands full with intrinsic educational missions.

8. Since the NIE disposable budget (i.e., free to commit) may well be much lower in fiscal years 1973 and 1974 than its total budget, NIE should focus on a small number of significant projects rather than support a large number of projects with small amounts of money allocated to each.

B. A Tentative Map of Programs

The following list of programs exceeds that which would be carried out successfully in the next two years. It is offered as a map on which the 1973-74 efforts of NIE can be located. For each program suggested, the main goals to be served are pointed out and the main alternatives reviewed.

1. Focus on Output Goals

a. Main Options

There are almost endless specific ways one could increase the realization of the three output goals listed in Section I, and a fairly large number of general ones. Briefly, these are the two instrumental goals (a. to increase the child's capacity to find, evaluate, digest, and use information; b. to prepare the child for a wide range of career pursuits and life styles) and the expressive goal (to develop the child's capacity to lead a full and just life, open to new ideas, to aesthetic considerations, to others and to himself).

The main alternative approaches for realizing these goals are:

1) Financial resources available to school systems could be significantly increased;

2) Financial resources available to non-schooling educational systems could be significantly increased;

3) Teachers could be retrained so that they could be more able to provide the needed services;

4) Knowledge as to how to realize these output goals could be increased and made available to parents, educators, and researchers.

We prefer the fourth alternative because: a) significantly increasing the resources sharply conflicts with one of the process goals (economy); b) making additional resources available to schools may end in their being deflected to other purposes because so many of the bare necessities of the school systems are not being met; c) the capacity to supervise the use of resources from the outside is difficult at best, expecially because we do not have clear standards for performance at this time; d) the retraining of about two million teachers would require a vast amount of money.

If NIE is going to concentrate some of its efforts on retraining teachers, the program would have to be one of enormous scale, and there is little assurance that the methods to be chosen to retrain teachers would be effective. We say this because of the difficulties others have already encountered when attempting to retrain teachers. For example,

> almost 50 percent of the (elementary) schools in California reported that they were having *extreme* difficulty with their inservice programs. The large number of teachers to be trained, and the inability of administrators and supervisory staff to provide effective leadership in the substantive content of new programs made formal inservice work relatively ineffective (Johnson, 1964, p. 171).

The teacher training programs that seem to work well, like the University of North Dakota's New School of Behavioral Studies in Education, are few and far between (Silberman, 1970, p. 284 ff.). And the conditions there seem to be unique, not general.

If NIE is to make a significant contribution toward the achievement of the output goals in the next two years, we conclude that the main effort over the first two years of NIE should be in the fourth direction: discovering how to realize these goals. (This would of course also entail answering the questions of what agents could best implement the new programs; what resources are needed; and what modes of supervision are most efficient.)

This discovery could be approached in one of the following three ways:

1) NIE could "buy" research programs specifically geared to formulate the needed programs. However, it is clear that we already have many scattered bits of information and reports on diverse practices. Therefore, reliance on this program may well be inconsequential. We would increase our knowledge in a hit-or-miss, uncoordinated fashion, which would not differ significantly from the state that educational research is in now.

2) NIE could support projects to disseminate findings already available and form programs which would help educators accept and apply these findings in their own systems. However, we suggest that we do not know enough to engage in this program. Efforts that have been undertaken in this area have been far from successful. For example, the ERIC system is an attempt to disseminate information that has not as yet worked well, even though a good deal of money and time has already been spent.

3) NIE could approach the problem of procuring this information through an

intermediate, take-stock phase. We suggest that this is the most logical step. *Operation Codify, BluePrint* is therefore recommended. A task force (or research team) should be set up and staffed by people who are skilled in systems analysis and in codifying findings to:

a) determine all the main approaches to alleviate the systems difficulties suggested by educational researchers;

b) collect the data available on the effectiveness, costs, and prerequisites for different aspects of the educational system from already existing educational research (including evaluative studies) and from data collected for other purposes;

c) compare the relative merits of programs and research strategies operating under different conditions and serving different kinds of pupils, teachers, goals, etc.;

d) determine where the gaps are in current research; and,

e) on the basis of the previous steps, discover how these gaps may best be studied. It has been stated over and over again that there is a lack of research in certain areas. For example, on students–their performance, motivation, attitudes and perceptions, etc. (See Smith, 1969). If it is discovered by the task force that this is in fact true, suggestions would be made where future research ought to focus.

Within two years, *Operation Codify, BluePrint* should issue three major Guides to Action, based on the best available knowledge. Each Guide to Action will be geared toward the achievement of a different one of the three output goals. These guidebooks should then be made available to educators, including not just teachers but also parents, school administrators, etc. (They could be updated biennially as more information becomes available.) Second, a different edition would provide detailed guides for researchers as to where significant topics lie and, for the funding agencies, where to focus future investments.

The problems of dissemination will not be as acute for *Operation Codify, BluePrint* as they have been for other such enterprises. The Guides to Action would be far more focused and, at the same time, they would synthesize the material already available. Thus, educators and researchers would not be given gigantic volumes of specific studies (e.g., CIJE). In addition, our suggested program entitled *Operation Dialogue* (to be discussed in Part 7 below) would help alleviate the problems of dissemination.

b. Goals to be Served

This program is most directly aimed at serving the instrumental and expressive goals. It will also improve the quality of educational services by achieving higher results for the efforts already spent on educational research. No major economies are to be expected because the new findings may require considerable reframing of approaches and other changes for educational systems. *Operation Codify, BluePrint* would not be particularly consequential for the distribution of services (or equality). It will be highly beneficial for the disalienation/involvement goals because it will also allow us to see how to make education less boring, less routine, more relevant, etc.

c. Manpower and Costs

Highly qualified manpower would be required for this program. The task force would have to include people who are familiar with the field and able to synthesize large bodies of knowledge. Three-quarter million dollars would be needed for fiscal year 1973; one and one-half million dollars for 1974. (The costs rise for FY 1974 because dissemination would begin in that year.)

To avoid "Robin-Hooding" of the funds for basic research purposes, or for chasing utopias, the work of the task force should be done on contract, rather than through grants, and closely supervised by an NIE staff team or an outside panel of experts.

2. Correcting the Balance among Output Goals: Expressive Programs

While all three output goals are dear to the majority of Americans, the expressive goal is more neglected than are the other two. Instrumental efforts are more in line with the declining, but still powerful, modern Protestant Ethic tradition; they sound technical and morally neutral and hence tend to be less controversial than the

expressive goals; they are certainly closer to what many people think schools are all about (teaching of skills and information). And while we all may wish the schools to "humanize" our young, there is often an implicit belief that this can be achieved on the side, in extra-curricular activities or by non-school institutions alone, such as the family and the church. In reality, the core activities of the schools are and must be deeply involved in expressive education if it is to be advanced. Other institutional arrangements do not suffice and they tend to be oriented toward traditional rather than forward-looking approaches.

In short, as expressive goals tend particularly to slip, there is a need for a special effort to sustain them, and, of course, to aim at achieving their realization directly.

a. Main Options

1) One way to strengthen expressive programs would be to train teachers directly in expressive methods. However, this would not change the structural forces which oppose this effort, from parental focus on instrumental goals to difficulties in evaluating and recognizing achievement in this area.

2) An alternative approach would entail organizing conferences and workshops, where NIE-funded people would meet with educators in order to sell the importance of expressive programs. But such efforts, when conducted in a vacuum, tend to be very ineffectual. Nor is it clear what, specifically, could be said, rather than preached.

3) We suggest that the development of expressive tests for pupils and the development of expressive educational indicators for school-systems would make a significant contribution. We discuss first the tests, then the indicators.

To suggest new tests runs into the current of justified reaction which sees testing in the United States as excessive, biased, and unbalanced. It seems true that pupils in many schools are tested too often. For example, in 1969, "more than 30 million children in the nation's elementary and secondary schools spent more than 50 million hours of class time completing standardized tests, at a cost in excess of a quarter of a billion dollars" (Jaeger, 1970, p. 39).

The number of tests administered annually is difficult to comprehend. "Almost 130 million 'standardized' tests are given in schools each year, or almost three tests for every student in the first grade through college. Test costs run so high that in New York City, for example, one dollar is spent on tests for every five dollars spent on books" (Sexton, 1967, p. 114).

It is also likely that some teachers specialize in teaching for tests rather than in educating. In states such as New York which require students to pass state-wide examinations in order to graduate, the pressure to teach for the tests is probably greatest for the following reason: If a number of students fail these examinations from a class, the teacher, the principal, and the superintendent are often blamed. The same principle holds for the frequent tests in reading and mathematical achievements that measure students' progress. The teachers know that they can be pointed to as being responsible for a lack of substantial progress. Therefore, it is easy to see how they might gear their teaching time to prepare the students for the tests.

Tests are not yet free from culture bias which tends to favor white middle-class male children.

> The fact that so little is known about the relationships between cultural content and performance skills raises the issue of the value orientation of most tests. Today, the new questions raised about black cultural values bring this problem into dramatic focus. For there can be no doubt that much of the content of tests which are supposed to provide a demonstration of "culture-free" skills (such as reasoning and drawing inferences) has been alien to black Americans. Supposedly it makes no difference what content is used within a test if all the data and information are given for solving a problem. Supposedly it all reduces to simple reading ability and, say, the drawing of inferences from what one reads. There can be, the testing apologists repeatedly tell us, no questions of bias in such an approach.
>
> More perceptive observers, however, feel that it goes deeper than this, that very complex and often very different cultural familiarities are involved. And these differences in seeing, hearing, feeling, and thinking on the part of black youth may be affecting their performance (Blake, 1970, pp. 166-7).

In fact, it is suggested by some that the average 15-point difference in I.Q. scores between black and white children is due to the cultural biases built into these tests. The same reasoning is advanced for the disparities in I.Q. scores between white children and American Indians, Chicanos, Puerto Ricans, etc. In recent years it has been pointed out that while girls initially have higher I.Q.'s than boys, this reverses as children grow older. The explanation according to Women's Liberationists is that the girls are increasingly socialized into their subservient, less-intelligent role. However true this may be, the effects of the tests themselves should not be overlooked.

Far more testing is done on instrumental skills and achievements than on expressive qualities. Thus, many critics of our testing would agree with the following:

> Reasonably good tests of achievements have been developed for certain basic skills such as reading and mathematics, but success in achieving other educational objectives—particularly in the affective, attitudinal, and behavioral realms—is far harder to assess.
>
> Some respond to this situation by concluding that output measures are so elusive, distorted or inadequate as to be quite useless. Others, including President Nixon. . . believe that these measures must be developed. . . (National Goals Research Staff, 1970, p. 92).

A sizable number of people would disagree with this orientation because they believe that tests "seem inadequate even for measuring academic achievement, a relatively simple variable. Complex behavior such as autonomy and creativity may not be measurable at all. Stress on academic achievement in schools may, therefore, be largely attributable to the relative ease of measuring it" (Sexton, 1967, p. 114).

Thus the question of how to balance our testing, or even how to approach this seemingly ever-present phenomenon of our school systems, is of great importance to those concerned with education in the United States. Clearly, the radical solution of eliminating tests is neither practical nor desirable.

The basic aims of the proposed program to develop expressive tests should be: (a) to establish the consequences of the high frequency of testing in our schools, and to work toward creating the conditions that would actually reduce the frequency of testing; (b) to conduct further research on freeing the tests from biases; (c) to develop tests which assess expressive and context-building achievements.

All three of these efforts are needed; however, the third one is most directly tied to enhancing the expressive goals of the educational system—the other two contribute more indirectly to our goals. Also, it should be pointed out that research efforts are already underway for (a) and (b), while (c) is most neglected and the least costly in funds and effort.

The following three examples of work on expressive test development are given for illustrative purposes only. These tests may well not be the most promising ones; they are listed here to suggest the kinds of effort which should be supported. The specific programs most deserving support must yet be identified.

Professor Torsten Husén of Sweden developed, under the auspices of UNESCO, a math test which was validated in a 12-nation study which included the USA (Husén, 1967). Typically, only after the development of this basically instrumental test was advanced did its creator turn to developing a "humanistic" test. This test asks pupils (of different nations and cultures) to interpret a short story by Kafka in order to assess comprehension of the story, sensitivity, and sensibility, and other expressive qualities. How far this particular test has evolved is unclear. The serious difficulties in any standardization of expressive tests have yet to be overcome. But we suggest that the development of such a test, even assuming that it would continue to be much less reliable than instrumental ones, would help balance testing—and the educational system—in the desired direction, to make it more able to serve the expressive goals.

Theodore R. Sizer, former dean of the Harvard Graduate School of Education, has written: "We need not only 'intelligence quotients' but also 'bigotry quotients'." (1970, p. 21). He tied this suggestion directly to the aim of correcting the imbalance between expressive and instrumental goals by stating that such quotients and the related "remedial work" necessary for excessively bigoted children would help "the moral development of a youngster—his sense of justice and his use of justice—[which] is perhaps more important than his cognitive development. This country has suffered excessively already from intellectually able, but morally stunted people" (Sizer, 1970, p. 21).

It should be made clear here that the results of expressive testing would be quite useful for educators and parents. The expressive attributes to be measured are those which can be altered. In other words, the expressive tests will not measure supposedly permanent qualities, as I.Q. tests do. Educators and parents will be able to apply the results of the expressive tests to prepare to give children what Dr. Sizer has called "remedial work."

A number of instruments have already been developed that measure levels of creativity. J. P. Guilford *et. al.* (1951) use a device that is almost the opposite of the traditional I.Q. tests. Students are asked to list all the many meanings of the words given. For mathematics, students are presented with data and asked to list as many different problems as possible that can be solved with the data given. Jacob W. Getzels and Phillip W. Jackson have also used instruments to measure creativity (1958, 1962), which are based in large part on the earlier work of Guilford *et. al.* They asked children to make up stories on the basis of pictures shown to them. While their research has been criticized for the choice and size of their sample (see Friedenberg, 1965), it seems that expressive goals would benefit from further research in this general direction.

R. C. Wilson's research is reported to have made it possible to identify the most talented 10 percent of the population in the following areas: creative dance, dramatics, writing, music, art, social leadership, and mechanical ability (Wilson, 1958, pp. 13-20).

Thus the applications and refinements of already existing instruments which measure aspects of the expressive goals would be a logical place for Program 2 to begin. The contributions from psychological tests should not be overlooked because these instruments may well be relevant to the development of expressive tests.

b. A Note on Instrumental Testing

Just as the expressive goal is to be strengthened in relation to the instrumental ones, to realize the new instrumental goals on the same level, research must be done in this area. Now, testing in the instrumental area is geared more toward measuring "bits" of information than toward measuring an understanding of context and procedures. Children are usually tested to discover if they remember the highest of specific mountains, rather than if they know how to find such information if they want it. They are much more often tested on the names of the capitals than on their ability to assess or integrate this information.

One researcher asked a group of elementary school teachers who were attending an inservice workshop to remember ten science facts they had learned when they were elementary school pupils (Ritz, 1969). The teachers, of course, recalled very few facts. If these teachers had been taught how to use the information available, they probably would have retained these teachings better.

Hence we conclude that in collaboration with National Assessment and/or other sources, tests to measure the capacity to integrate contexts and process information should be developed.

c. The Balancing Role of New Educational Indicators

I view the development of social indicators as basically a worthwhile effort (see *Toward a Social Report*, 1969). The general development of educational indicators is making significant progress (see Ferris, 1969). Continued development of these is needed if our knowledge of the educational system is to be improved; this is, of course, a prerequisite to the achievement of all educational goals. However, if a corrective in the direction of the expressive goals is to be achieved, special effort will have to be invested in developing indicators which assess expressive achievement rather than those which measure quantities of pupils, buildings, or funds. For instance, the career choices of graduates of high schools could be used to assess the extent to which the system is growing more expressive over time. Important indicators here might be a decline in those who go into business, or an increased interest in humanities, the arts, etc.

Nation-wide indicators alone will not be sufficient; if the educational dialogue (see Program 7 below) is to benefit from these indicators, sub-population data will also have to be assessed and published. This may be rather difficult, especially if school systems or even city-wide or state-wide systems are specifically identified. For example, school administrators and others will fear low scores for their schools; but here, the benefits rise with the "political" costs.

d. Goals to be Served

Most directly to benefit are the expressive goals, since Program 2 is aimed directly at building them up compared to the instrumental ones. Services to instrumental goals would also improve because testing in this area would be less biased and more focused on learning skills instead of on information "bits." The quality of the expressive services would rise, for the tools are directly aimed at making this possible. To the extent that minorities are more prepared for expressive than instrumental work, such a change in the system should be beneficial to them. As for costs, no saving is to be expected from these additional requirements. Larger decreases in alienation, particularly in minority groups and the upper middle class, is expected to follow from an emphasis on a more expressive program.

e. Manpower and Costs

Highly qualified manpower which is available in several key centers is needed for this program. Three to five million dollars a year should be allocated to a few focused research projects for the development of expressive tests and for several trial runs to be conducted in different school systems. Educational indicators may largely be funded elsewhere. NSF is making major grants for such research. A two million dollar contribution from NIE may be enough to secure its participation in this effort.

Contracts rather than grants should be given by NIE. If these contracts are fully specified, NIE guidance will not be as sorely needed here as it is for Program 1, because this mission will be easier to specify and supervise.

3. Programs to Disalienate, Involve, and Motivate: Focus on Educators and Parents

Motivating and involving children in the school in general and in its specific programs is essential for their success. A detailed organizational analysis has shown this to be the case (Etzioni, 1961). It has also been widely observed that large segments of the student population are alienated. This, in turn, is a main source of disciplinary problems, which alienate teachers, parents, and the community.

For example, Martin Deutsch (1960) discovered that teachers who work in schools that are in predominantly black and poor neighborhoods spend as much as 75 per cent of their classroom time maintaining (or attempting to maintain) order. This certainly does not leave very much time for teaching. The ramifications in the households and in the community should not be difficult to imagine.

a. Main Options

Four main approaches have been suggested to rebuild the legitimacy of educational efforts in the eyes of teachers and students:

1) We could, it has been argued, abolish the schools, and conduct education "incidentally" or at educational resource points (such as libraries, museums, etc.).

2) We could insist on major curriculum reform so that the subject matter taught would be more relevant, interesting, flexible, or clearly related to post-graduation career opportunities.

3) NIE could support the reform of teaching techniques and the development of more effective ones.

4) The school structure could be significantly changed through a transformation of the concepts, patterns, and structures of authority on all levels.

Paul Goodman is one of the proponents of incidental education (Option 1). He believes that:

(1) Incidental education, taking part in the on-going activities of society, must again be made the chief means of learning and teaching.

(2) Most high schools should be eliminated, with other kinds of youth communities taking over their sociable functions.

(3) College training should generally follow, rather than precede, entry into the professions.

(4) The chief occupation of educators should be to see to it that the activities of society provide incidental education, rather than exploitation or neglect. If necessary, we must invent new useful activities that offer educational opportunities.

(5) The purpose of elementary pedagogy, through age twelve, should be to delay specialization, to protect children's free growth, since our families and community both pressure

them too much and do not attend to them enough. Modern times pollute and waste natural human resources, the growing children, just as they do the land, air, and water. What else would one expect? (1970, pp. 85-86).

In his chapter entitled "Why We Must Disestablish School," Ivan Illich states: "The first article of a bill of rights for a modern, humanist society would correspond to the First Amendment to the U. S. Constitution: The State shall make no law with respect to the establishment of education" (1970, p. 11).

Abolishing the schools along these or other lines seems to me to be both completely impractical in the foreseeable future and also erroneously based on utopian assumptions as to the capacity of other systems to absorb the educational function. The reasons for this position are being spelled out in a separate report now in preparation (Etzioni, in progress).

Curriculum reform (Option 2) is a huge and varied topic. To evaluate efforts in this area responsibly would require a project of great scope. However, we can certainly state that:

1) Attempts at curriculum reform are and have been underway through the initiative of school systems, curriculum specialists, teachers colleges, etc., on every subject taught in schools. Neither past investments nor any investment made by NIE would significantly affect this formless ocean. In fact, according to Charles E. Silberman, the U. S. Office of Education, The Educational Testing Service, and others have found that the curricula used in science, social studies, history, and English have not changed very much, although a number of specific curriculum reforms have been created for each of these areas of study (Silberman, 1970, pp. 168-179).

2) Most efforts in this area have not resulted in benefits which are measurable. For example, their extensive review of the literature led Wallen and Travers to conclude the following about the adoption of "progressive" curriculum changes:

> In the early grades, students in the progressive curriculum tend to perform somewhat below expectation in reading and arithmetic but overcome their inferiority by about sixth grade; they tend to be average or somewhat superior throughout their school years in achievement areas involving language usage; when moving up to junior high school, they suffer no handicap in dealing with a more traditional curriculum; when compared on tests designed to measure work skills, organizing ability, ability to interpret information, and civic beliefs, they score higher but *often not significantly so;* they tend to be better informed on current affairs and they tend to be rated higher by high school teachers and independent observers on such dimensions as initiative, work spirit, and critical thinking. *In summary, the findings indicate no important differences in terms of subject-matter mastery and a superiority of the progressive students in terms of the characteristics which the "progressive school" seeks to develop* (Wallen and Travers, 1963, pp. 473-4, italics added).

It is, of course, difficult to rely on such findings because of the many methodological difficulties involved. (For example, they are evaluative studies done on schools with primarily favorable attitudes toward curriculum reform that are located in high socioeconomic status neighborhoods.)

3) For curriculum reform to be effective, other changes, which are discussed below, are needed in educational systems. It should be remembered here that according to the *Coleman Report,* "differences in . . . curriculum . . . are so little related to differences in achievement levels of students, that, with few exceptions, their effects fail to appear even in a survey of this magnitude" (Coleman, 1966, p. 316). Therefore, a substantial effort geared toward curriculum reform would probably not lead to any major changes in the educational system.

Practically the same may be said about teaching techniques (Option 3). Many observers have commented on the nature of research on teaching methods. The following captures the essence of this literature:

> Little has been done to develop teaching methods on the basis of scientific knowledge of learning. . ..
>
> Since teaching methods have arisen largely outside of a scientific context, studies which compare the effectiveness of one with another can hardly be conceived as constituting a program of scientific research. This is a point which has been

> missed in the numerous reviews of studies of teaching methods which have come to our attention. Most reviewers treat these studies as if they constituted a unified body of scientific knowledge–which they do not. They are comparable to efforts made by a medieval physician to determine which of two herbs had the greater curative value, when he had no knowledge of the chemistry, physiology, or pharmacology involved (Wallen and Travers, 1963, pp. 465-6).

In fact, "there is little evidence that any of the patterns of behavior advocated have a clear relationship to the learning process itself" (Wallen and Travers, 1963, p. 461). Proposals for a reform of teaching techniques are present in every other book on education. There are many recommendations for team teaching, nongraded schools, open classrooms, participatory teaching, etc.

Since efforts are already underway in this area and since the directions for future research would be more fruitfully discovered through another approach (to be discussed presently), it seems NIE should not, at least in its first two years, place any major emphasis on the reform of teaching techniques. All this is not to suggest that nothing of importance could be gained by continued or increased investment of federal funds in this area or in that of curriculum reform. However, it seems that more would be achieved, requiring a smaller investment, in pursuing the following alternative.

What we need to face most urgently is the transformation of the concepts, patterns, and structures of authority on all levels. Therefore, *Project Authority: New Styles* is suggested (Option 4).

Educational institutions are a major factor in shaping these aspects of authority, and at the same time, they are affected by the existence of differing authority relationships. Educational systems are affected by the patterns of authority that the child encounters at home and in his neighborhood which lead to expectations about the schools. Patterns of authority used in the home and schools affect the graduates' capacity to deal with problems of authority as employees, employers, members of any other institution from church to union, and as citizens–via the law.

Educational institutions have always faced these issues in many ways, from the nature of civics courses to what to do about discipline. However, there is one way in which the question of authority is now coming to a head that cannot be ignored; either NIE will ride the wave and seek to guide it, or the opportunity may well be missed. This is the "open-classroom" movement.

About 25% of the English primary schools and a fair number of schools in this country are experimenting with this approach. Their features and problems have been discussed at length (see Plowden, 1967; Featherstone, 1971; Silberman, 1970). To a large extent this complicated, multi-trend, confused movement is an attempt to deal with the structure and content of the educational institution particularly on the authority question. How much is the child to be guided? By whom? In what ways?

At stake for the educational system are the roles of the teacher and principal as agents of schooling; more broadly, the roles of the school, the parents, and other elders–as agents of education–are at stake; most deeply affected is the societal structure, where authority is invested in judges, legislatures, policemen, the law, supervisors at work, clergymen, etc. In short, all relationships based on some other arrangement than two or more co-equal peers are being questioned by Americans.

We take for granted that (a) the traditional modes of authorities cannot be revitalized, and should not be, because they are out of step with the transforming nation; (b) the no-authority pattern (everybody doing his thing) is not viable.

What we need most, therefore, is a new form of authority rather than further attempts to deform it. The single most important step in renovating authority is to restore its purposiveness. If authority is not viewed, by those subject to it, as being exercised to advance goals which they feel are worthwhile, the use of authority is considered to be illegitimate, naked power, hence oppressive. On the other hand, if authority advances goals citizens are anxious to realize, authority is considered to be activating, invigorating–to be leadership.

It follows that new patterns of authority should be identified which would be more responsive to the evolving nation and its citizens than are the outgoing ones. This would hold both for the teacher's role and for the school system's. More generally, the patterns of authority of the educational system as a whole should be

considered (e.g., what are the consequences of "incidental learning" or "student governed" systems for the development of the capacity to relate to authority?).

Earlier we agreed with many other observers that changes in teaching techniques and curriculum have not yet been very consequential. However, it goes without saying that changes in the patterns of authority of the teachers and of the school structure will have interactive effects on teaching techniques and curriculum content. Thus, if changes in the authority of the teacher and of the school structure go hand in hand with changes in curriculum and teaching techniques, one could accept an accumulative effect from all of these adjustments in the educational system. In fact, one of the reasons why changes in teaching techniques or curriculum by themselves seem not to be effectual is precisely because they have been attempted in isolation.

The new style of authority will have to be more flexible and individualized. It will have to provide more options than before and be more willing to modify these options and to adjust them to individual differences in need and taste. Thus, instead of one curriculum, schools will need to offer an increasing number of "electives." Instead of lockstep promotion from year to year, there will be individual differences in pace and course-by-course advancement, allowing a child to be a second grader in, say, math, but a fourth grader in English. Colleges will have to allow students to drop in and out again, or complete their work in three to five years, instead of the now sacrosanct four. And so on.

Irving Kristol has pointed out that the educational system, almost by necessity, is slow to change and out of step with the rest of society (Personal Communication, March, 1972). For example, the open classroom movement with its permissive orientation is being experimented with at a time when many Americans are recoiling from such an orientation in other spheres. This can be seen in the attitudes of different groups, especially Middle America, even in the recent editions of Dr. Benjamin Spock's book, for example. Therefore, this program should not only identify the patterns of authority that will be responsive to Americans; it should also investigate alternative methods for reducing the time lag so that educational institutions can better reflect the wishes of the nation.

Given that the issues involved are very complex and highly charged, the evidence quite scarce and in great conflict, the major efforts here should be a mapping out of the issues and the questions that need to be answered.

Unlike *Operation Codify*, *BluePrint* and the development of new tests and indicators educational research in this area is in a more preliminary stage. Thus, we are not ready to issue specific suggestions, let alone guidelines; we need to agree on the issues to be studied. However, since developments in one sub-area, that of opening classrooms, are rapid, a "negative finding" report might be called for, alerting practitioners that many of the statements recently issued which are guiding policy in growing parts of the country, especially with regard to "open schools," are "softer" (less based on systematic information) than many seem to assume. Of course, a mere one-page warning would not do, but a detailed, critical review—also useful as a guide to future efforts—would help.

Even more significant would be the preparation, in a two-year planning project, of future dialogue and research work to be done in this area. This would allow researchers to coordinate their efforts in such a way that definite findings could be made in a relatively short period of time and with less cost than would be possible without some overall planning strategy. This planning project would give direction to any further work done on authority patterns and the educational system.

b. Goals to be Served

This project will initially have no effects on any of the goals because it will largely serve to build up our understanding of the issues. If successfully completed, it could have major consequences for the disalienation/motivation goal. It would also make significant contributions to the expressive goals because teachers would be in a better position to help their pupils learn to be open and to appreciate others. The costs of administering education would be reduced if pupils were more willing to learn under a different authority pattern. Members of minority groups would benefit particularly, as would the sons and daughters of Middle Americans, whose authority patterns at home and in the neighborhood are especially incompatible at present with the post-modern American needs. Since these are the heretofore deprived or neglected groups, equality would benefit.

c. Manpower and Costs.

Highly qualified manpower is required for each aspect of *Project Authority: New Styles*. One half to one

million dollars a year is needed for the "think tank" effort. Two to four million dollars a year is needed to identify different types of open classroom systems and other authority patterns and to evaluate them with regard to different kinds of pupils and the educational goals, especially the output ones defined above. A great deal of NIE guidance would be needed for this project.

4. Programs to Disalienate, Involve, and Motivate: Focus on Students

Disalienation and its corollaries, as well as expressive education, could both be served by a large variety of educational efforts.

While the previous program is aimed at teachers, parents, and indirectly at the disalienation of pupils, another program is needed to secure direct involvement of the students, who are, in great numbers, disaffected from society and from education as we know it.

a. Main options

The possible alternatives for securing the direct involvement of students include:

1) Reliance on routine schooling activities. (Traditional lectures on civics are a typical example.)

2) Evaluation and development of educational activities which entail participatory, learning-by-doing projects.

It is difficult to make a better case for the second approach than that made by James S. Coleman through his criticisms of the first one. We hence quote from it at length both to make the case and to illustrate the approach.

a. The academic approach, which teaches citizenship in the classroom as something to be learned, much as any other subject, appears singularly ineffective—and most of all with the students who need it most, for these are the same students who don't learn any subject well. The few glimmers of hope in this approach seem to be in the teaching of history and anthropology, which apparently act to broaden the perspectives with which people view events. Yet it's still the good students' perspectives which tend to be broadened most, thus widening the gap which already exists between them and their slower-learning fellows.

b. Attempts at introducing civic responsibility through student government and the like are generally ineffective because student councils seldom have any real authority and usually know it. Furthermore, any sense of responsibility and citizenship they teach is again to those who need it least, the elected representatives who, by the very fact of their election, have apparently exhibited a high degree of citizenship in the past. So this is carrying coals to Newcastle, and very few coals at that.

c. Attempts at civic participation and community projects seem to fail for another reason: not because they are ineffective when carried out, but because they are seldom carried out. They seem to require an uncommon commitment and energy on the part of a teacher. It is hard to conceive of such projects being introduced as a standard part of a public school without becoming perverted or diluted in the process.

d. Merit systems, standards of conduct, and the like laid down by school authorities seem to work only for the docile; and for whomever they work, it is questionable whether they aid or impair citizenship education. They are most characterized not by merits and rewards, but by demerits and punishments; taken to the extreme, they remind a casual observer of the authoritarian regime of a prison. (In one school I am presently studying, for example, there is a favored group of boys called by both teachers and students the "brownies." They are viewed by the other students with the same mixture of respect and disdain as the trusties in a prison are viewed by their fellow prisoners.) (1959)

In addition, segments of our youth population can be characterized as having a strong case of floating idealism. This is especially so for upper middle class youth, well depicted by Kenneth Keniston (1971), who react negatively to the ideals of their parents (and their parents' generation) and to the fact that these ideals are

often not actively pursued with an intense moralism. In part, this is a very positive, constructive force which could move society closer to realizing its nobler values. In part this is an impatient, destructive force, which does not see the need to take into account values and persons in conflict with the ideals of the "true believer;" adherents of this view naively believe that every problem can be "rapped" away. To channel this idealism constructively, pupils need opportunities for idealism, reality-testing, and integration. It should be noted that there have been a large number of attempts at achieving this end. Perhaps NIE-supported efforts should place more emphasis on evaluation of existing attempts than on the development of new ones. We suggest:

1) Children need opportunities to be of service to their communities.

For example, students could tutor other students who are less advantaged than they are. There have already been attempts to organize such tutoring. The Tutorial Community Project, which was tried out in the Pacoima Elementary School in Los Angeles, was based on the following goals:

> The process of students tutoring themselves and each other is not to be extracurricular, incidental, or remedial. Rather, it is to be an integral, essential part of the everyday school operation. The teacher's role should shift from teaching students to teaching and overseeing tutors. Not only are students to be involved in tutoring; they are also to be encouraged and assisted (by teachers, other staff members, and parents) to participate in establishing objectives, in planning methods and procedures, and in performing such support activities as testing, correcting papers, and keeping records of progress (Melaragno and Newmark, 1971, pp. 101-2).

In this project, for example, children in the sixth grade tutored kindergartners.

> Results of the first year's experiences were very encouraging. For the most part, upper grade students responded enthusiastically, seriously, and intelligently to the training and tutoring. They contributed excellent suggestions to improve the tutoring and demonstrated great pride in performing their assignments as tutors. Their teachers reported that the tutors benefited from the experience, and that it was evident in their attitudes and schoolwork. The kindergartners demonstrated learning from being tutored; tests administered at the end of the year showed that kindergartners improved the most in the area of language usage and other prereading activities. One particularly striking result was that more kindergarten students began reading in preprimers than had ever been the case previously. Moreover, almost all kindergartners were ready to begin formal reading instruction in the first grade. Previously, the first grade teachers had spent from two to four months in reading-readiness activities; they now indicated that they could proceed directly to books and reading instruction (Melaragno and Newmark, 1971, p. 110).

Another alternative would be to encourage the use of peer tutoring. Ph.D. study groups are examples of attempts which could be modified and altered for primary and secondary school students. Peer tutoring, if it is to be relevant to this program, would be on non-academic subjects as well as on subjects taught in school. For example, young people who have had bad experiences with LSD and other drugs might set up a time, say, an hour a week, when they would "rap" with others about the dangers of drugs, based on their personal experiences.

"Mini-courses" taught by students, teachers, and volunteers have been instituted in a number of school systems. The use of these courses for the purpose of allowing children to be of service to others, while learning more about themselves and the world in which they live, should be explored; past attempts should be evaluated.

Students could be of more direct service to their communities in a number of ways varying from community to community. The well-known history of the city of Baltimore done by high school students a number of years ago is an example of useful community work which could be applied in other places. Young volunteers are often welcome in state mental hospitals, homes for the aged, etc. Students could set up their own projects to serve their communities. For example, storefronts could be used by students to offer information about drugs, consumer protection, housing violations, etc.

By participating in these efforts, students gain a more realistic notion of the limits of societal change; they would be in reality-testing situations, because they

would be participating in real projects, rather than projects set up by the schools to teach them. The students would clearly be of service to their communities at the same time.

2) Opportunities for cross-class, cross-race, cross-ethnic integration are also needed.

Greater opportunities for systematic introduction to alternative life styles, the plurality of sub-cultures, and unifying, society-wide values would be offered if pupils of different colleges, secondary schools (and maybe even primary ones) engaged in joint projects.

Historically in the United States, the frontier lands served such integrative functions for adults. Then the need to mix was lower, since the nation was not acting as much like a collective whole as it has in more recent decades and as the next century will force it to be. Now the nation seems to suffer from a lack of unifying experiences (which acknowledge diversity but also bind society together). Thus Middle America, the upper middle class, and minorities, rarely meet at all.

This is expecially so for positive, shared-goal contexts. Given recent developments, it seems clear that bussing is not the means to be used to achieve this end. Cross-school projects, carried out in conjunction with other educational institutions, and places not usually considered educational institutions (from work place to mass media), would go a long way toward providing cross-class and cross-race encounters. These projects could be arranged (i.e., guided but not controlled) by students, teachers, volunteers, or by centers set up for such purposes. The development of such centers is suggested in Part 5 below.

For example, one public school in Chicago has group workers at a nearby settlement house meeting with groups of students diagnosed by the schools as probably being emotionally disturbed. One teacher at the public school complained,

> How can I teach ordinary arithmetic to the class when the kids from the special group come in and tell everyone that they were learning fractions at Howell House by using measuring cups to make pizza? Similarly, Cabrini parochial school on Chicago's west side has used the neighboring Sears, Roebuck-YMCA's gynmasium and pool under the direction of the YMCA youth program staff for the past five years without charge (Erickson and Krumbein, 1971, p.122).

If such efforts were coordinated on an inter-school basis, students would have the opportunity to meet with other children from diverse backgrounds on "neutral" territory.

Another approach to this problem could be the use of different forms of the mass media. The listener-sponsored radio station in New York City, WBAI, has a program which is produced, edited, and run by high school students. Local newspapers might be very interested in having a weekly column run by students from the schools in their areas.

Students often have particular interests in subjects that are not taught in their schools. For example, some students surely must have a fascination with local businesses, government, cultural institutions, etc. Volunteers, or "inspired amateurs" from these different spheres could work directly with interested children from different schools (see *Innovation and Experiment in Education*, 1964).

> Raymond public school in Chicago has, since 1962, operated a program of music lessons and attendance at musical performances for its students entirely through the Urban-Suburban Youth Project. This project identifies suburban housewives with musical training to serve as teachers and companions at professional concerts and rehersals of operas, symphonies, musicals, and so on.

> Large companies are becoming increasingly willing to release executives and lower echelon employees for part-time community service on a regular basis. The company receives favorable publicity, the employee obtains a breadth of community experience and prestige (service is becoming a must for the rising young executive), and the school benefits from the service (Erickson and Krumbein, 1971, p. 122).

Again, if programs like these were run on a city or region-wide level, students would have the opportunity for experiences on cross-class, cross-race and cross-ethnic bases. Because participation in these programs would be voluntary, a good deal of the resistance encountered by other integration attempts (e.g., bussing) would probably not be of great significance here.

A fair amount of experience as well as a good deal of thought have already been given to this general subject. Maybe in collaboration with ACTION, one or more demonstration projects could be planned and initiated. The experience of existing efforts which are relevant could also be assessed.

b. Goals to be Served.

The disalienation/motivation and expressive goals are the ones most directly served. Economy, next, if the programs are designed with this purpose in mind. For example, the use of volunteers would not require a financial outlay from school systems. Equality will be advanced because the less advantaged students will be placed in a position to work with the more advantaged ones and because, unlike meetings in the classroom or lecture halls, in many of these activities the disadvantaged children would do as well, if not better than, the advantaged. The quality of schooling in the traditional sense may suffer; quality of education will certainly benefit.

c. Manpower and Costs.

Manpower needs would not be as acute here as for other projects listed so far, because this program can rely in part on educational administration, youth leaders, etc., who are not as scarce as top quality researchers.

The amount NIE would have to allocate depends on the amount of contributions from ACTION, local school systems, and the extent of the demonstration projects. Five to eight million dollars a year would be needed if a series of demonstration projects are to be carried out wholly by NIE. One to two million dollars would suffice for the funding of program development for a few new ones. Collaboration with other "units"–especially ACTION and local ones–is essential for the successful execution of this project.

5. Coordinating, Mobilizing, and Redistributing Resources

The resources available to American education are, by and large, controlled locally and not by the federal government. Even those allotted by Congress are largely spent according to local wishes. On the local level, educational efforts are numerous, diverse, uneven, and uncoordinated. To achieve greater economy, to mobilize non-school resources for educational efforts, and to redistribute those resources available with greater equality, major new efforts are needed.

a. Main Options

Alternatives which may be considered include:

1. Control and coordination could be concentrated in the federal government;

2. Control and coordination could be concentrated in already existing public school systems;

3. A new kind of local arrangement could be instituted that would coordinate educational institutions, communities, and parents.

This third alternative is the one we prefer. It is based on the following assumptions. First, it is neither desirable nor practical for the American educational system even in one locality to be directed from one center. Even if there were a United States Department of Education, on the cabinet level, it would have to function the way the French and Israeli ministries of education do. It would act mainly as a source of information, knowledge, economic resources, ideas, persuasion, and coordination, but not as a means of control for the entire educational system. Given the size and diversity of this system, the move toward decentralization of government functions, and especially American traditions and values, Option 1 is clearly untenable.

Second, to rely on the public school systems for coordination, mobilization and redistribution of educational resources also seems not to be a viable option. Public school systems are at best viewed as one major means to teach children. Other educational resources include private and parochial schools, instructional T.V., specialized facilities such as libraries, apprentice programs, voluntary tutorial schemes, etc. These resources are quite unlikely to respond to guidance from the public schools. Moreover, the public schools are where much of the ineptness, resistance to change, and inequality are lodged.

A new kind of arrangement that would coordinate educational institutions, communities, and parents seems to be needed. To be effective, it should encompass the full range of educational institutions and resources, not just schools, and it should be "neutral" rather than an

agent of any of the main existing educational systems. We shall refer to it as an *Educational Concertation Center* to show that it, like the conductor of a concert, will guide various players, each performing his own tune but it will not dictate or control what is played. The *Educational Concertation Center* may serve as a clearinghouse, a place of reference, as a means of coordinating efforts for the initiation and administration of cross-school and school-community projects.

Each center may have initially no more than one or two educational leaders and a small auxiliary staff. They would: initiate meetings between representatives of educational institutions in their territory (city, town, rural region) who otherwise never meet; explore complementary needs; set up joint projects; develop new educational resources; provide referrals of pupils and parents to various educational facilities; etc. The existing Health Councils serve such a function in the health services area. It might be helpful to locate centers in community and junior colleges where individuals have an interest in education. The centers would thus serve the educational system and they would also give added impetus to the colleges in which they are located.

This effort is not to replace experiments of parental or community participation in the guidance of each single school. But it will provide them with access to a city, town, or region-wide facility and coordinating source. Finally, the *Educational Concertation Centers* would also be a natural pipeline to carry new programs, ideas, materials, etc. from NIE to the localities, and vice versa.

Educational Concertation Centers should not be confused with educational parks which have been recommended by Thomas F. Pettigrew and others. Educational parks are mainly geared to solving the problem of segregation by relocating the schools.

> Each park would be located on "neutral turf" in an inner-ring suburb or just inside the central city boundary. It would be so placed that the same spoke of the mass transit system could bring both outer-ring suburban children into the park and inner-city children out of it. The attendance area of each park would ideally comprise a pie-shaped metropolitan wedge containing a minimum of 12,000 to 15,000 public school students. The thin end of the wedge would be in the more dense central city, and the thick end in the more sparsely settled suburbs (Pettigrew, 1971b, p. 186).

The designs for these educational parks could of course vary.

> The most widely discussed design would involve a reasonably large tract of land (80 to 100 acres as a minimum) and no fewer than fourteen or fifteen schools serving grades from kindergarten through high school. One educator has visualized a campus design for 18,000 students consisting of two senior high schools, four junior high schools, and eight elementary schools (Pettigrew, 1971a, p. 73).

While the educational parks idea calls for a relocation of a tremendous number of educational facilities, the suggested Educational Concertation Centers do not. The latter are geared to coordinating already existing educational institutions and resources.

In fiscal years 1973 and 1974, an assessment should be made of the value of these Educational Concertation Centers and the extent to which their function is preempted by state and city Departments of Education; plans should be drawn up for the staff, function, funds, and authority of such centers; and one or a few prototypes should be developed. Probably no evaluation could be achieved before fiscal 1975.

b. Goals to be Served.

The Educational Concertation Centers would serve the disalienation/motivation goal as well as the instrumental and expressive ones because the greater number of educational resources to be relied upon will probably be quite conducive to these aims. If the program of Educational Concertation Centers was carefully planned, initiated, and coordinated, it would clearly contribute to the quality of service and the goal of equality. The costs for this program would probably be large, but this would depend on the scope and pervasiveness of the final program.

c. Manpower and Costs

The more available type of manpower, educational administrators, could well be used here, similar to that suggested for the preceding project.

Even a rough estimate of costs is not possible until the scope of the program is set; will it be on the scale of

a "demonstration" project, or will it have a wider scale? How many services should be provided by the centers? To what degree do local governments desire to participate in such a program? NIE guidance could be very limited once the basic format is developed. Such centers may serve as the main dissemination point for other NIE findings and programs. If this is to be the case, greater NIE guidance would be required.

6. Program to Economize

A severe resource shortage will continue to plague the educational system, even though the reduction in the size of incoming groups will alleviate the problem to some extent. There is a growing and spreading demand for quality services; for all children to get the same service the better schools now provide; and for schools to act as correctives for the past wrongs of society as well as to lead the way to the "good" society. This increased interest in quality of service will more than offset the savings that a decreased enrollment allows. It should also be remembered that the change in group size occurs at a slower rate than does the rate of price increases in most years. Thus, a major breakthrough toward increased economy is not to be expected because of the decreasing size of the student population.

In addition, reference in this part should be to costs per unit; whether or not costs rise or fall depends, of course, on whether one holds constant increases or decreases in the volume of activities as unit costs are changed. Historically, the tendency has been to increase the volume; hence savings in per unit costs were often more a source of revenue for newly desired activities than a source of cuts in actual level of expenditure. Still, in this way one economizes, because one gets that much more done with the same expenditures. And, of course, the option of cutting total costs is available.

a. Main Options

The possible alternative approaches to this problem include:

1) The revenues made available to educational systems could be increased.

2) The services provided by the educational systems could be decreased.

3) Less costly manpower could be hired.

4) Greater reliance could be placed on the profit motive.

5) Technological shortcuts, which would reduce the costs of the system, could be further developed and relied upon.

While increasing revenues (Option 1)[5] would, by definition, provide more means for the service of the output goals listed above and probably help enhance quality, it does conflict with a key process goal, the aim to economize. We will hence focus here on the other three alternatives which are possible ways to reduce costs rather than increase revenues.

Usually it is argued that a cut in the services provided (Option 2) could be achieved at little or no loss in goal realization; and that in some cases, even a gain in goal realization could be achieved. Thus we argued for three years of undergraduate study instead of four (the way colleges are in the United Kingdom and many were in the United States before World War II). Such a cut may well result in less alienation, since students dislike the long years of study and unnecessary requirements. A similar case has been made for cutting sharply the hours of teaching per day in high schools. This option surely deserves study. The issues are in part empirical (e.g., would there be no loss, and indeed a gain) and in part, political (e.g., could shortcuts be achieved in view of public expectations and vested interest in requiring longer years of study?)

One may use less costly manpower (Option 3) by drawing on teaching assistants, para-professionals, peer or student-to-student teaching, parent and community participation, and other extra-school resources. This alternative is relatively well explored. Additional studies of the effects of such use on the quality of education are needed; we expect that some forms will help and others will undermine this goal. Equality and legitimacy may well be enhanced through the use of less costly manpower.

There are already a fair number of projects and evaluations of attempts to rely on private contributions, "performance" teaching, etc. (Option 4), and first reports are not very encouraging, though additional experimentation is surely to be considered. For example, the attempts at contract teaching, where private concerns are paid for results only, seem to be failures in the sense that they do not lead to any improvements over the more typical approaches to teaching children (*Science News*, 1971).

An alternative which deserves special attention is the use of Technological Shortcuts (Option 5). We suggest that this alternative is the preferred one not because it is significantly superior to the other ones, but because it seems to arouse less (although far from little) resistance. All the other alternatives seem, though, quite deserving of both empirical exploration and public support.

The idea that technological developments might be used to reduce the costs and pains involved in dealing with social problems is clearly appealing. A broad rationale for this approach is suggested by an analogy between the development of modern techniques of producing consumer goods and the search for new techniques of providing social services. Mass production and considerable reductions in cost per unit of consumer goods were achieved by an increased reliance on machines (broadly conceived to include communications satellites and computers) and a decreased reliance on muscle and brainpower—on people. However, up to now social services, including educational institutions, in which performance is frequently criticized for falling far below desirable levels, have not mechanized most work. Since the need for services in these areas is great, available resources low, and trained manpower expensive and in short supply, it seems useful to consider replacing the "human touch," at least in part, by new technologies.

It is widely believed that human services, such as health, education, and welfare, cannot or should not be automated. A major study conducted by the author suggests otherwise (Etzioni and Remp, forthcoming). By and large, the reliance on technology follows a three stage dialectic history. First, there is a great enthusiasm, as we have seen in reference to talking typewriters, programmed teaching, responsive cribs, and ITV. Then, when the technologies prove to be far from cure-alls, initially full of "bugs," and expensive, resistance develops. A grand disillusionment sets in which is more or less the condition we face now.

We should be ready for the middling synthesis. Technologies, we found, are usually especially suited for significant sub-purposes and/or significant sub-populations. And they often free persons from routine work, allowing them to engage in less routine activities, thus humanizing the system; e.g., in the kitchen, the gas oven frees the chef to practice his art, rather than spending a lot of time chopping wood. In the educational system, most work for all pupils is still done manually.

We suggest, fully aware of the disbelief this statement will encounter, that it is possible to automate between 30% and 40% of all teaching work in secondary schools and a smaller but still very significant part of the work done in primary schools. To do so will lead to a gain in the quality and humanity of service and without great financial outlays. Moreover, the program suggested takes into account the sources of resistance heretofore encountered.

The main difficulty is in getting people to reconsider an idea they already know "will not work." In fact, there have been several hundred studies of the effectiveness of television for instructional purposes. There are even several summary reports of the ITV studies. The reviews report that "the vast majority of these studies has revealed 'no significant differences' in measured performance between students who were taught via television and those who were taught directly" (Reid and MacLennan, 1967, p. 2). For example, in 1956, ten lessons in physics and ten lessons in algebra were broadcast to 2,405 students in 34 Chicago high schools. At the end of the lessons, examinations on the material were given both to students who had received televised instruction and to students who had received face-to-face instruction based upon course outlines prepared by the television instructors; no significant differences were found between the scores of the two groups (Lund, Englehart and Nee, 1956). Although no direct inference can be drawn from the statistical finding of "no significant differences," the large number of studies in which this has occurred implies great success, because it suggests that the carefully rehearsed, repeatedly usable, and economical videotaped instruction might be used where teachers are not available, or to release teachers for other tasks. The idea is as simple as filming choice lectures, experiments, and demonstration projects for all areas in which instrumental learning is to take place and making the films available in classrooms. For instrumental purposes, then, the films would be used instead of teachers. We do not recommend this approach for expressive education because we assume that expressive education requires personal identification with the teacher. However, at least half of secondary school education and significant parts of primary school education are instrumental.

For the near future, over-reliance on ITV and other technological shortcuts does not seem to be a problem. For example, a report prepared for the President and Congress in 1969 estimated that the use of televised instruction in the nation, as well as films, filmstrips, records, programmed texts, and computer programs, does not fill more than 5% of instructional time (*To Improve Learning*, 1969, p. 137). It appears that ITV has a considerable capacity, not presently being exercised, for increasing the quantity and quality of instruction.

A "machine-only" system of instructional television, in which live instructors serve primarily to update lectures in videotaped courses, might, at first glance, seem to be the most efficient utilization of ITV. However, while the economies associated with this arrangement may stir the interest of some academic administrators, and while the intimations of technological unemployment emanating from such a conception may promote caution or antagonism among instructors toward ITV, the development of even an approximation to such an arrangement seems both practically unlikely and theoretically undesirable.

ITV teaching should, as a rule, not be provided in isolation. To be truly effective, ITV must be combined with other elements to provide rewards and to keep the system "humanized." It can be combined with tests, teaching machines, peer discussions, assistant teachers' tutorials, and other elements. A number of studies have indicated that the mixed use of ITV with these elements provides more effective instruction than does ITV used by itself (Chu and Schramm, 1967, pp. 87-97). In fact, a majority of these studies indicate that student motivation and learning from televised instruction are increased more by immediate live reviews and discussions of the televised material than by any other means. Schramm observes that,

> in almost no successful case of instructional television anywhere in the world has the medium *been used alone.* It always has been built into a teaching-learning system. Typically. . .this system utilizes a teacher on television, a teacher in the classroom and often a third teacher preparing study and practice materials, all planning together and working as a team (1969, p. 259).

Thus, ITV should be used in conjunction with other teaching techniques. Of course, the details of the mixes of these other elements remains to be worked out and, above all, experimented with. It should be noted that such mixed systems, combining the televised presentation of the core of a curriculum with live instruction in discussion groups or tutorial sessions, are currently in operation. These mixed ITV systems include, among others, the Hagerstown project, the Chicago City College, and The Pennsylvania State University, Iowa State University, Michigan State University, and Ohio State University (see McKune, 1967).

The use of ITV and other technological shortcuts, in combination with live instruction, can be developed to suit local as well as regional or national preferences. For example, a group of schools which are located in nearby ghetto neighborhoods of Chicago serving ethnically similar communities have pooled their resources in order to create ITV programs which are more relevant to the needs of their students (Bretz, 1969, pp. 19-22).

While such programs would probably be of great benefit for the educational system, it should be pointed out that the General Learning Corporation, which examined the required costs for differing media systems, concluded that the "total costs are markedly reduced when media systems operate for a large number of students on a regional or national basis" (Molnar, 1970). Thus, for ITV and other technological shortcuts it seems that some kind of balance will have to be achieved between economizing and improving the quality of education. It is impossible to predict the exact balance. Experimentation is required, following a clear understanding of the educational system's aims for ITV. Is it to be used more for economic reasons or should its role in improving the quality of services be stressed?

The main difficulties in the past have been political. Teachers are no more anxious to be replaced by machines than are members of any other group. They fear the rise in standards for teachers which would supposedly occur if, in the room next door, some of the best teachers in the country were lecturing on ITV. And they also fear that others will "copy" their material. Any ITV program would have to deal with these and similar factors, or else fail. Regarding the fear of unemployment, it must be made clear that ITV is not to be used to displace teachers but to free teachers for other missions (e.g., intensive tutorials; expressive

education). ITV will allow for "savings" for the educational system because it will be required to hire few new teachers. Fears over standards should be aired in group discussions. Copyrights of TV courses should be clearly defined.

One difficulty which will require solution is logistical. It is not possible for each class or even each school to develop its own ITV programs. The main benefits of ITV and other such technological shortcuts are that they can be used effectively and economically on interschool bases. This logistical problem may, of course, be related to political problems; however, it should be recognized that it exists in addition to political difficulties and must be treated on its own.

For 1973-74 one or more model schools should be found which would be willing to cooperate fully. (New schools to be opened or those particularly short in teachers should be chosen.) A full-scale experiment should then be conducted. That is, the volume of the school's activity should be analyzed and the more repetitive elements (e.g., English I) should be put on ITV, as the reinforcing, expressive elements are also carefully worked out. Full evaluation of the effects follows.

b. Goals to be Served

First and foremost, greater economy would result. Quality of service would also benefit because only "excellent" lecturers would be chosen while regular teachers would be freer to give more individualized attention to pupils in their classrooms. If correctly designed, instrumental goals will also benefit because greater stress would be placed on context than on the learning of bits of information. Opportunities for greater individualization of service, pacing, etc., should also increase pupil motivation. The release of teachers from routine work should be attractive to them if the fears reported above are properly allayed.

c. Manpower and Costs

Research and development, engineering, and systems-analysis experts would be necessary for this program. These experts would work in conjunction with social scientists and educators.

Three to five million dollars a year is needed for one major prototype.

Contracts by NIE are called for.

7. Programs to Enhance Legitimation

The most important feature of the American educational system is that it is neither centralized nor de-centralized, but fragmented or feudalized. Centralized education would assume that the system is guided by one ministry in the national capital, the way it is in France. A de-centralized approach would assume considerable measures of local autonomy. For this approach, however, there would still be a central point from which the authority to regulate the system rests. While at one point or another the Supreme Court, the Office of Education, Congress, and others have acted as if they assumed that the American educational system has such a central feature, the fact is that decisions are made by 50 State Departments of Education, as well as by city educational systems, and by thousands of school boards, which function, more or less, in independent fashions. Both conservatives and liberals have misunderstood the federal government's paying for part of the costs of education as a capacity to control it.

First, the federal annual expenditures on education are below 15% of the total expenditures involved in the educational system. Second, the systems themselves are fragmented between agencies, departments, and bureaus. Third, the funds—despite whatever it may say in some books, memos, or even in congressional acts—are by and large dispensed without any, or only very weak, strings attached. That is, the federal financial input is small and largely unconditional.

Finally, there are fundamental reasons, which need not be explored here, which make it extremely unlikely that this core feature of the American educational system will change significantly in the foreseeable future. It follows that an effective NIE program must largely assume reliance on other means than financial pressure or reward. Persuasion, emulation, dissemination of knowledge, collaboration with local groups favorable to the desired change, and other such means must be at the heart of new programs to be developed. Any suggestion that assumes that desired significant changes can be decreed, bought, or otherwise pushed seems unrealistic.

a. Main Options

The following alternative programs approach this problem in a more realistic fashion. One alternative is to

rely on dissemination, knowledge, and emulation. This approach is at the core of the recently initiated change agents programs which seek to provide local systems with research help for problems they identified on their own or with the help of the change agents. We assume that this program will be evaluated by other HEW units and that NIE need not worry about it. We would assume that the program makes somewhat optimistic assumptions about the schools' ability to identify new problems and the capacities of the agents to help. But this remains to be seen.

The opposite approach is ultra-pessimistic; it assumes most schools are beyond remedy or creative response. It has been suggested that NIE help in building up a major social movement made up of various groups that are critical of the established school patterns. Built around the new ideas that will flow out of NIE projects, it would help our educational system evolve into a de-schooled or post-school system. Some such effort was tried by OEO in its early days and led to the predicted backlash. It is hard to conceive of a government agency directly or indirectly inspiring and guiding a major innovative movement which would, by its very nature, be in opposition to most school systems, which are closely tied to local and national power centers.

A third approach would be to develop a direct bridge leading to and from NIE to the fifty states, thousands of school systems, and other key educational institutions, in order to involve them in NIE works, gain their support, and benefit from their suggestions. We suggest that NIE concentrate its efforts on this alternative, *Operation Dialogue.* There are several ways that NIE could approach this:

1) Formal structures may not be completely without merit, although they should not be relied on to carry out this mission entirely. Thus, an NIE advisory board (in addition to the professional one), composed of representatives of the fifty states and of select local educational systems, might be one tool. The board could meet perhaps four times a year for two days, when it would be briefed about NIE's efforts and findings and asked to suggest new areas for future efforts. This would have to be done in a way that would not give rise to false hopes, requests for funds for local missions, or a sense of inauthentic participation. This can be achieved if the scope of the board's responsibilities is clearly defined.

2) A more active dialogue could be provided through regular regional conferences for educational administrators to be carried out regularly by a special division of NIE. The function of these conferences would be similar to those of the advisory board.

3) Even more effective would be the development of a continuous training center for local administrators at NIE or in regional centers, where new practices would be discussed and explained. These could run from three to fourteen days; longer sessions could take place during the summer. The centers ought to be used not just to "spill the goods," but to communicate upwards the needs of the local educational systems. NIE, in collaboration with one or more teachers' colleges, may wish to affect the training of new school administrators, especially for those who plan to enter state and city services.

4) Other means should be formulated–in consultation with local authorities–to provide the most effective two-way link between NIE and the key decision points of the American educational system, which, to repeat, are not in Washington.

One topic deserving special attention and first priority is the twin problem of the requirements for the certification of teachers and teacher training. The question of what a state should require before it certifies a teacher is, of course, of great consequence. While it would be of some benefit to engage in research studies on the consequences of setting different levels and kinds of requirements, a grand dialogue among the states on the subject, initiated, enriched, and promoted by NIE, could be of considerable value. It is widely believed that many of these requirements are out of kilter with the teacher specifications and knowledge needs of the educational system. This is a question of considerable complexity which will require a good deal of attention in the future. After all, teachers will continue to be the main source of educational manpower at least for the next ten years, despite increased reliance on teacher aides, student-to-student teaching, and machines.

In these ways, and others to be designed, NIE would link up with local educational forces. This would prevent its programs from moving too far from the educational system and help it secure support for specific suggestions in the NIE effort.

b. Goals to be Served

The main goal is to build up the legitimacy of the educational system, its goals and R&D effort, not directly for pupils, but for educational administrators, local government, community leaders and ultimately, the citizens-at-large. The costs involved for educational systems should be affected because *Operation Dialogue* would lead to the gaining of more local support. Either expenditures could be reduced or the educational system would be able to rely more than it can now on the funds of local units. The effects of *Operation Dialogue* on the other goals will depend on the details of the ideas which are chosen for discussion and on the results of those discussions.

c. Manpower and Costs

It is difficult to assess the required manpower for *Operation Dialogue*. Those chosen should be people familiar with the educational institutions in this country. In addition, they should be able to contribute to productive dialogues without alienating participants. For particular dialogues, specialists may be called in to give information, to act as "mediators," etc.

It is impossible to estimate the costs of *Operation Dialogue* until the scope of the program is delineated. NIE staff and local educators should be directly in charge of this program.

C. Summary of Programs

The following outline summarizes the preferred programs and those alternatives that have been reviewed in this chapter (*'s identify the preferred programs):

1. Focus on Output Goals:

a. The financial resources available to school systems could be significantly increased.

b. The financial resources available to non-schooling educational systems could be significantly increased.

c. Teachers could be retrained so that they are better able to provide the needed services.

*d. The knowledge as to how to realize these output goals could be increased and made available to parents, educators, and researchers.

1) NIE could "buy" research programs specifically geared to formulate the needed programs.

2) NIE could support projects to disseminate findings already available and form programs which would help educators accept and apply these findings in their own systems.

*3) NIE could approach this problem through an intermediate, take-stock phase, *Operation Codify, BluePrint.*

2. Correcting the Balance among Output Goals: Expressive Programs:

a. NIE could train teachers directly in expressive methods.

b. Conferences and workshops could be organized in order to "sell" the importance of expressive programs.

*c. Expressive tests and expressive educational indicators could be developed.

1) The consequences of the frequency of testing could be studied.

2) Further work could be conducted to free tests of biases.

*3) Tests could be developed which assess expressive and context-building achievements.

*4) Indicators could be developed which would assess expressive achievement.

3. Programs to Disalienate, Involve, and Motivate: Focus on Educators and Parents:

a. The schools could be abolished and education could be conducted "incidentally."

b. We could insist on major curriculum reform.

c. NIE could support the reform of teaching techniques.

*d. The school structure could be significantly changed through a transformation of the concepts, patterns, and structures of authority on all levels.

1) The traditional modes of authority could be revitalized.

2) The no-authority pattern could be experimented with.

*3) New patterns of authority, which would be more responsive, could be identified, *Project Authority: New Styles.*

4. Programs to Disalienate, Involve, and Motivate: Focus on Students:

a. Routine schooling activities could be relied upon.

*b. Educational opportunities which entail a participatory learning-by-doing project could be evaluated and further developed to provide opportunities for idealism, reality-testing, and integration.

*1) Evaluate and develop opportunities for children to be of service to each other and to their communities.

*2) Evaluate and develop opportunities for children to be introduced to alternative life-styles by engaging in projects on cross-class, cross-race, and cross-ethnic bases.

5. Coordinating, Mobilizing, and Redistributing Resources.

a. Control and coordination could be concentrated in the federal government.

b. Control and coordination could be concentrated in the public schools.

*c. Educational Concertation Centers could be developed.

6. Programs to Economize

a. Revenues to the school systems could be increased.

b. Some of the services provided by the schools could be cut.

c. Less costly manpower could be used.

d. Greater reliance could be placed on the profit motive.

*e. Technological shortcuts could be developed and experimented with.

7. Programs to Enhance Legitimation

a. Efforts to increase dissemination, knowledge, and emulation could be supported.

b. NIE could help build a major social movement that would evolve our educational system into a de-schooled or post-school system.

*c. A direct bridge between NIE, the fifty states, thousands of school systems, and other key educational institutions could be created: *Operation Dialogue.*

*1) Formal structures could be relied upon to some extent.

*2) Regional conferences could be conducted.

*3) A continuous training center for local administrators could be developed.

*4) Other means could be formulated in consultation with local authorities.

The following table summarizes the goals to be served, the rough estimate of costs, the nature of manpower, and the nature of NIE guidance for the preferred programs.

SUMMARY TABLE

PROGRAM	PREFERRED PROJECT	MAIN GOAL TO BE SERVED	ROUGH ESTIMATE OF COSTS * FY/1973	FY/1974	NATURE OF MANPOWER	NATURE OF NIE GUIDANCE
A. Focus on Output Goals	*Operation Codify, BluePrint*	Instrumental & Expressive	$3/4	$1.5	Systems Analysts	Close Supervision
B. Correcting the Balance among Output Goals: Expressive Programs	Development of Expressive Tests and Indicators	Expressive	$4-5	$4-5	Educators, Test Developers	Fully Specified Contracts
C. Programs to Disalienate, Involve, and Motivate (Focus on Educators and Parents)	*Project Authority: New Styles*	Disalienation/ Involvement	$1.5-1	$1.5-1	R&D Experts	Close Supervision
D. Programs to Disalienate, Involve, and Motivate (Focus on Students)	Opportunities for Idealism, Reality-Testing, and Integration	Disalienation/ Involvement	$6-9	$6-9	Educators, Youth Leaders	Collaboration with other "Units"
E. Coordinating, Mobilizing, and Redistributing Resources	Educational Concertation Centers	Disalienation/ Involvement; Output Goals	?	?	Educators	Limited once Program Set Up
F. Programs to Economize	Technological Short Cuts	Economy; Quality of Service	$3-5	$3-5	R&D Experts, Engineers, Systems Analysts	Contracts Called For
G. Programs to Enhance Legitimation	*Operation Dialogue*	Legitimacy; Economy	?	?	Uncertain	NIE Staff & Local Educators should be in charge

* In Millions

III. THE STATE OF THE ART

A. The Existing System

The barriers to a greater realization of a goal are numerous and varied. A sociologically adapted cybernetic theory reported elsewhere specifies the following impediments:

1. Lack of knowledge;
2. Lack of communication of knowledge to decision-makers;
3. Faulty decision-making;
4. Faulty implementation networks (or organizations);
5. Lack of power and resources to back up or carry out the decisions made;
6. Lack of consensus among those to be affected and/or those to participate regarding the means to be used and the goals to be pursued (Etzioni, 1968).

This list of barriers to the realization of a goal is far from arbitrary. Figure 1 summarizes the theoretical position of each of these factors.

In Figure 1, Items 1, 2, and 3 are parts of the guidance system overlay–the traditional cybernetic mechanism. Item 4 deals with the ways the guiding overlay reaches into the societal processes which are being guided–the underlay. Item 6 refers to the citizen feedback; Item 5 is a ratio of the resources and powers available to the overlay over that available to the citizens. It represents the strength (or weakness) of the overlay.

We strongly recommend that a detailed analysis of the existing educational system, and of its R&D effort, be ordered along these lines. That is, a full-fledged analysis should be made of reasons why the educational system often falls so short in its attempt to realize its goals, and why most of the educational research helps so little. For example, research on instructional television was very carefully examined by D. W. Stickels (1963). He set up non-demanding methodological standards and then rated 250 studies on ITV. As a result of his analysis of the methodology of the available studies, Stickles found that only ten (4%) met his standards and that another twenty-three had "partially interpretable" results. All the others were quite unacceptable. And, while this cannot be documented here, this is about the way we would expect evaluations of research in other areas of education to go.

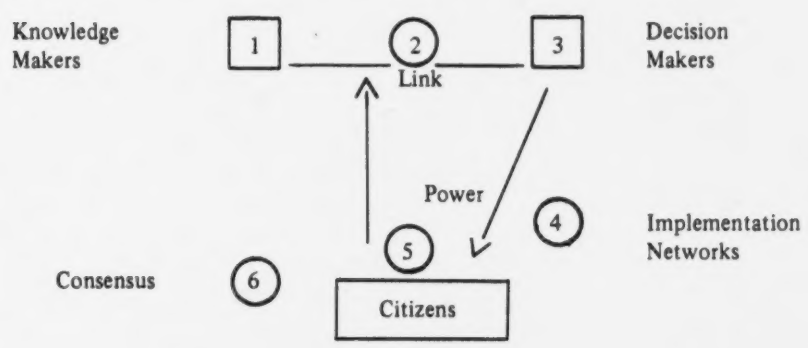

Figure 1: Potential Barriers to the Realization of a Goal

This analysis should proceed along the lines indicated by sociologically adapted cybernetic theory. Each of the six elements which the theory indicates are barriers to the realization of goals should be examined in terms of their relationship to the causes of these well-known deficiencies in educational research. Such an analysis would serve (a) to identify major blocks to future progress; (b) to sort out the changeable from factors difficult or impossible to change; (c) to develop strategies which grow out of a "where-we-are" analysis that will aim to move us toward our goals, rather than strategies which grow out of a "where-we-would-like-to-be" analysis. Our very preliminary examination suggests the following.

1. We know so little about so many aspects of the educational system, that most educational policy-making is not, and at this state cannot, be based on solid information and analysis. According to one critic,

> This voluminous research has come to few conclusions and had almost no effect on the schools. . .
>
> The lack of a systematic and centralized approach to educational R&D in the past has resulted in heavy losses and needless duplication of research data. Data have been collected for many thousands of fragmented studies, at great cost of money and effort, analyzed for certain limited purposes, reviewed for academic journals and then lost. There has been no accumulation of raw or coded data. Each researcher must repeat what his colleagues have laboriously done before him—go out into the field, give achievement and other tests, punch student scores on data cards, and after some statistical analysis, put the cards in his closet until they are thrown out. An estimated 10% of all research collects data that already exist but cannot be located (Sexton, 1967, pp. 111-115).

Most educational research which has been funded up to 1972 by the U.S. government has led to no results at all or to results based on very faulty designs; most of the available educational research manpower is incompetent and organized in units whose patterns are shaped by political rather than relevant considerations.

> Educational R&D, like schools themselves, has generally been under the control of school administrators and other traditional elements of school and society. R&D efforts of local schools, state departments of education, the NEA, and even to a large extent the United States Office of Education have usually been under the direct supervision of school administrators.
>
> 'By and large, with obvious exceptions,' says Martin Mayer, 'educators in positions of power and visibility are not among the most able members of their profession. Organizations like the AASA and ASCD, and the Educational Policies Commission of the NEA have an almost unbroken record of fearful objection to the introduction of ideas not yet vetted by the shopkeeper communities which control school board elections' (Sexton, 1967, p. 111).

2. Most of the findings available are by no means within the reach of enough educational decision-makers. These findings are poorly reported, poorly disseminated, or in conflict with the decision makers' *a priori* beliefs. It has been reported in a number of places that it "takes thirty years before an innovation in education has widespread adoption, and it requires ten to fifteen years for even the first 3% of the schools to make significant changes" (McPhee, 1967, p. 111).

This time lag may not be quite as acute now. However, it still needs to be reduced. *Operation Dialogue* (reviewed in Chapter II) would be able to contribute toward the reduction of this time lag. It has also been said that of all the research studies published in a given year, only three of them are crucial and of significance for the educational system (Bloom, 1965).

3. Decision-making (which is largely carried out by thousands of school boards and boards of education in 200-odd cities and 50 states) is largely incremental and occasionally super-rational or utopian. That is, by and large, decisions are made regarding minute matters, which deal with insignificant differences, such as endless rounds of minor re-scheduling, small changes in curricula, etc. While such incrementalism may be sufficient (because small changes accumulate) for adjusting an already effective system to a slowly changing environment, when such an approach is used in a maladjusted system in a rapidly changing environment, it only leads the system into deeper and multiple crises.

The opposite response, of chasing the year 2000, grand master planning, and attempts to rely on

mathematical models or simulations, is not much more effective, for reasons explored elsewhere (Etzioni, 1967). Of course, those relatively rare occasions in which effective decisions are made deserve special attention.

The usual implication of this super-rational approach is that

> *innovation is best approached by a carefully planned, calculated and systematic procedure.* Undirected change cannot be tolerated as a systematic method. Yet, this is the typology that appears most often and usually ends with the innovation being held in disrepute. Is it any wonder that teachers are so accustomed to saying, 'That won't work here!' (Orlich, 1967, p. 84).

4. Public school systems are the main implementation network of the educational system. They are the focus of intensive and numerous criticisms, most of which are valid, although often the blame lies not with the schools themselves.

> The emphasis on educational services for school systems has retarded the advancement of research in several ways: by dictating research fads, by forcing research to serve a legitimative function, by confusing educators about the nature of empirical research, by draining off potential research manpower, and by destroying the research activities of bureaus which are unable to keep research and routine service separate (Sieber, 1966, p. 18).

There are practically no educational research networks. Efforts in this area are fragmented and almost unguided on the national level. Much of whatever guidance is provided is utopian, political, or otherwise on the wrong track.

5. The giant discrepancies which separate the goals set and the resources available are common knowledge. These discrepancies have serious consequences for educational research. According to Patricia Sexton,

> a large obstacle to successful R&D is the lack of clarity about educational goals. School systems are so vast that they move awkwardly at best toward the definition and achievement of goals. Often they are distracted into detours and dead-ends. Or they may assume that requiring teachers to write their 'goals' on the board each day provides adequate direction for the system (1967, p. 112).

No matter how much money is devoted to educational R&D, the efforts will be of less significance than they would be if the aims of the educational system were clearer.

The power discrepancy between what educational systems seek to accomplish and the authority they command is equally large. For example, Supreme Court rulings against school prayers attempt to regulate the educational system in a way that is contrary to the wishes of most parents. These rulings are widely unheeded or circumvented (Donald Reich, personal communication).

6. The struggle over educational goals (or consensus) has intensified over the last few years and does bring to the forefront several guidelines as to the direction we should follow. We tried to identify these guidelines in the preceding goal section. Specifics, such as what percentage of all Americans, or of Middle America, or minorities, support each goal mix, are not clear, and no estimates are attempted here.

B. Improving the System

In the following discussion we suggest the main steps which may improve the capacity of the educational system to serve its goals by reducing the barriers already identified. The programs we prefer for NIE support have already been reviewed with reference to their contribution to the educational goals. They are reviewed here again because, we suggest, they all also serve to reduce the barriers to goal realization (or, to effectiveness).

1. Much of NIE's work will be an effort *to improve knowledge*, which includes not just research, but also the training of R&D manpower, the restructuring of the organizational molds in which research is carried out, the collecting and processing of information for non-research purposes (e.g., educational indicators). *Operation Codify, BluePrint* is aimed at processing information we already have to distill the knowledge hidden in the various studies already completed. This project will also identify major gaps in our knowledge that must be filled more urgently than others. The development of educational tests and

indicators is in the area of applied research. Hence, they will all increase our knowledge of the American educational system. The overview of the problems of authority will clarify the issues yet to be investigated. Thus, Programs 1, 2, and 3 are chiefly knowledge-makers.

The programs dealing with identifying (opportunities for idealism, reality-testing, integration; Educational Concertation Centers; and Technological Shortcuts: Programs 4, 5, and 6) are more in the development and demonstration realm that in that of basic or applied research, but nevertheless they are still largely in the knowledge production realm.

Operation Dialogue (Program 7) will help insure that the knowledge that is produced will be disseminated and relevant to the clients of NIE; this discussion itself will produce new knowledge, although this is not its main goal.

2. *To improve communications between knowledge-makers and decision-makers in education,* many steps could be undertaken and while all dissemination efforts are relevant, the major program aimed directly at this particular need is *Operation Dialogue. Operation Codify, BluePrint* is also quite relevant because it seeks to communicate findings to decision-makers as well as to practitioners and researchers. And if research staffs or research units (such as the "change agents" or regional labs) are attached to the Educational Concertation Centers, this would be a way to intensify the give and take between educational knowledge-makers and decision-makers.

3. It might well not be necessary to have a special program devoted to *the development and evaluation of decision-making strategies* for education. There is no reason to believe that the problems faced in this system are significantly different from other domestic systems. An effort to disseminate what we know on the subject might be useful as part of *Operation Dialogue.* Also, the Educational Concertation Centers may serve as a model (as could other domestic systems, e.g., the concertation of health services) for the development and evaluation of decision-making strategies.

4. In reference to *implementing networks,* the major questions raised can be grouped into two parts. First, what kind of schools we shall have–a question faced from one perspective by Project Authority. Second, what should be the relations between schools and other educational institutions–a question treated on an applied level by the Educational Concertation Centers project. An evaluation of the efforts made here is one major way to explore realistically the issues involved.

5. *Identification of new resources* of financial and local government support for new educational systems is greatly needed. Financial matters are covered in another report (Bowman, 1971). The resources already available to school systems and other educational agencies would be used more effectively if Educational Concertation Centers evolved. Also, these centers would help identify and mobilize educational resources available in non-educational institutions, from volunteer work in hospitals to "internships" with newspapers. *Operation Dialogue* may also lead to the identification of new resources for the educational system.

6. *The improvement of public support* for the educational system in general and specifically for the innovations that will arise from the suggested NIE programs is to be expected from any significant improvement in realizing the educational goals that we have discussed above. This is expecially so for disalienation/motivation and humanization of the system through greater stress on expressive efforts. Increases in quality and leveling off of costs are of course also highly relevant. Of the programs, *Operation Dialogue* is most directly geared to this need.

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